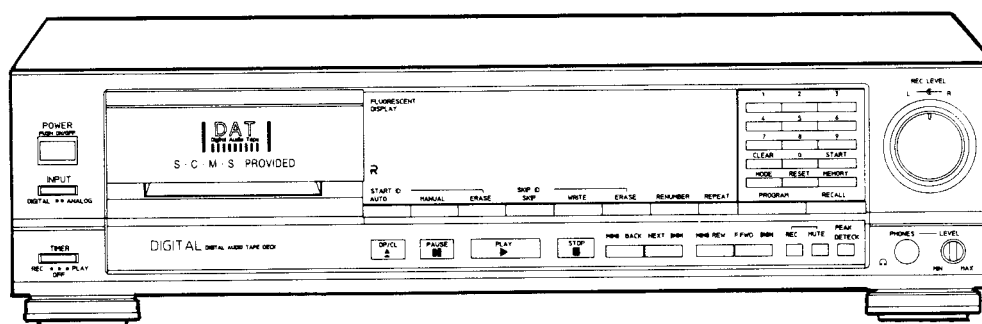


SERVICE MANUAL

MODEL: DT-850

DIGITAL AUDIO TAPE RECORDER



SPECIFICATION

PLAY BACK

total harmonic distortion (at 1KHz)	: 0.005%
S/N ratio	: 100 dB
frequency response (+/- 0.5 dB)	: 2Hz ~ 20KHz
Channel separation (at 1KHz)	: 97 dB
dynamic range	: 96 dB

RECORD

total harmonic distortion (at 1KHz)	: 0.006%
S/N ratio	: 92 dB
frequency response (+/- 0.5 dB)	: 5Hz ~ 22KHz
channel separation (at 1KHz)	: 85 dB
dynamic range	: above 90 dB

GENERAL

sampling frequency	: 32KHz, 44.1KHz, 48KHz
quantization	: 16 bit linear
error correction CIRC	: circular interleave Reed-Solomon Code
modulation	: 8 ~ 10 modu. (ETM)
Head	: rotatory head (two head)
channel	: two channels
power source	: 220V/50Hz
power consumption	: 26W
Max. size	: 420 x 96 x 355mm
Weight	: 8.64kg

TAPE

track pitch	: 13.6 μ m
tape band	: 3.81mm
cassette size	: 75 x 54 x 10.5mm

Design and specification are subject to change upom improvement without prior notice.

CONTENTS

■ SPECIFICATION	1
■ SERVICING NOTES	2
■ FEATURES	2
■ LOCATION AND FUNCTION OF CONTROLS.....	5
■ DISASSEMBLY PROCEDURE	11
■ OUTLINE OF DAT OPERATION AND BLOCK DIAGRAM.....	13
■ ADJUSTMENT	15
■ IC VOLTAGE CHART.....	22
■ TROUBLESHOOTING	24
■ SCHEMATIC DIAGRAM	39
■ PATTERN DIAGRAM.....	40
■ WIRING DIAGRAM.....	42
■ IC EXTERNAL AND INTERNAL BLOCK DIAGRAM.....	43
■ MECHANISM AND TAPE	55
■ PARTS LIST	68
■ MECHANICAL EXPLODED VIEW AND PARTS.....	73
■ DECK EXPLODED VIEW AND PARTS.....	75
■ HOUSING EXPLODED VIEW.....	77

2. SERVICING NOTES

- 1) Prevent shock hazard by unplugging power supply cord before opening cabinet.
- 2) Avoid repairing under direct sunshine and heat which may cause cabinet, transistor and IC to be transformed or misoperate.
- 3) Use a soft cotton swab moistened with warm water or neutral cleaner when parts of unit need to be cleaned.
- 4) When replacing parts with safety features built in, be sure to use specified parts with same specs only.
- 5) Avoid repairing the set near TV or any other magnetic forces.
- 6) Disconnect plug from wall socket during electric storm to reduce the risk of damage.
- 7) Be careful of electrostatic source when using control IC.

3. FEATURES

FEATURES OF DAT

DAT (Digital Audio Tape Deck) is a new type of tape recorder which can record tape signals to digital form while the old cassette deck records signal in the form of analog.

1) EXCELLENT SOUND QUALITY

Sound signals are recorded and played in the form of PCM (Pulse Code Modulation) and high quality of sound with Total harmonic distortion less than 0.005% and signal to noise ratio 100 dB is produced by adapting eight times over sampling digital filter.

2) CONVENIENT FUNCTION SELECTION BY SUB CODE

By using sub-codes such as START-ID indicating the start of a song, song number, and SKIP-ID etc, you can select song more rapidly and precisely up to 200 times more than an ordinary deck.

3) DIGITAL-IN AND OUTPUT FUNCTION

Dubbing between two DAT is possible through coaxial cable and optical cable which inputs and outputs the audio signals and sub codes, without affecting the sound quality between the two DAT.

In order to protect copy right, SCMS function is built in.

It may cause record impossible through coaxial and optical digital input terminal.

This system may cause digital record, through coaxial and optical digital input, impossible.

* Refer to the next page for more detail about SCMS.

INPUT TERMINAL SPECIFICATION

input terminal		terminal shape	input Impedance	rated input Level
analog in		RCA Jack	47K ohm	235 mV
DIGITAL IN	coaxial input	RCA jack	75	0.5Vp-p
	optical cable input	optical connector Jack	—	—

OUTPUT TERMINAL SPECIFICATION

output terminal		terminal shape	Output Impedance	rated output Level	Load impedance
analog in		RCA Jack	690	2 Vrms	10k above
DIGITAL IN	coaxial input	RCA Jack	75	0.5Vp-p	75
	optical cable input	optical connector Jack	—	—	—
headphone output		stereo Jack	100	0 ~ 35 mW	32

ACCESSORY

record playback connection cord (RCA JACK) : 2 piece
instruction manual : 1

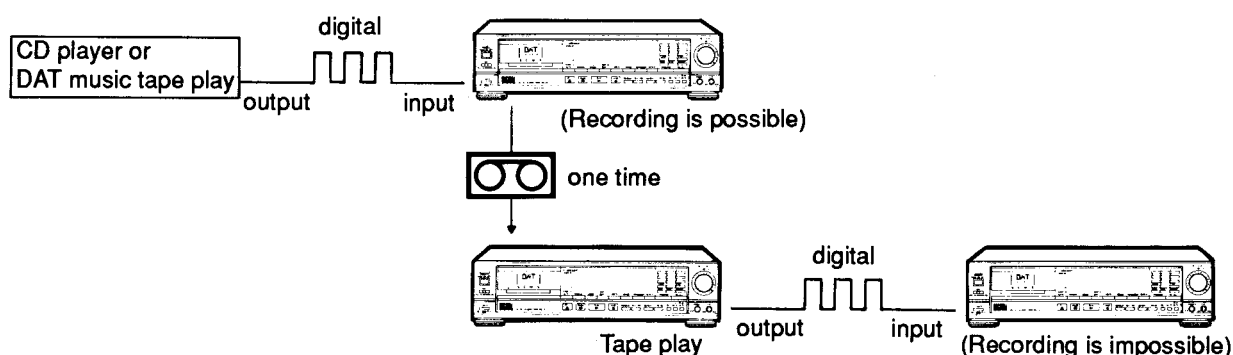
S.C.M.S

S.C.M.S (SERIAL COPY MANAGEMENT SYSTEM)

DT-850 is a high-tech product with a new type of recording system or SCMS designed to protect the copy right for the recording system by allowing recording not more than once on other digital audio recording material such as a compact disc and digital audio tape (DAT).

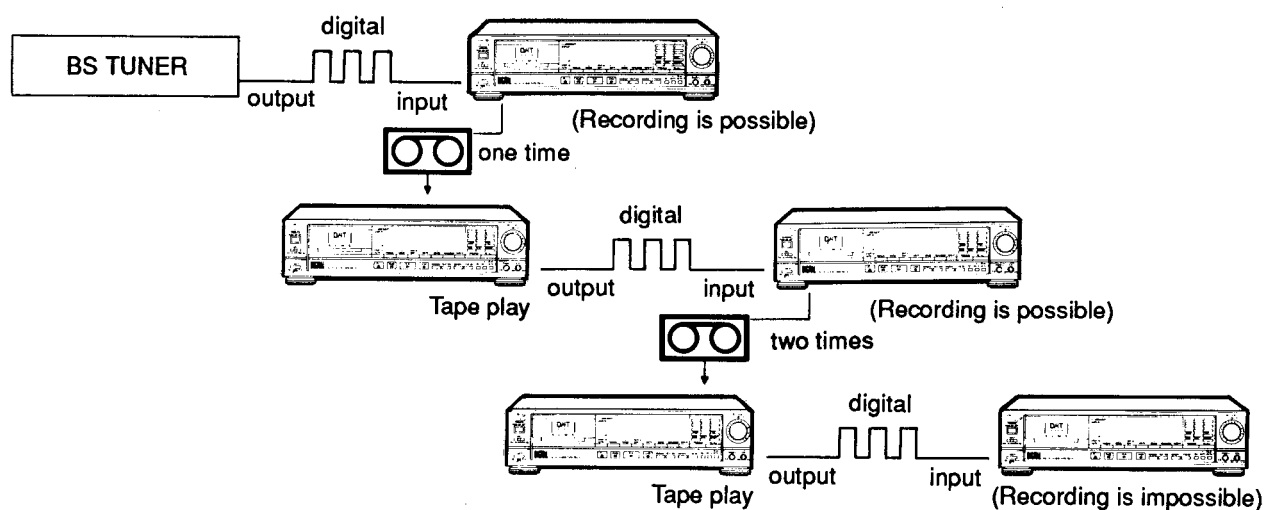
Example 1 When you record CD & DAT soft tape in the digital form.

- Once you record in the digital method, you can't record with it to another tape in the digital method.



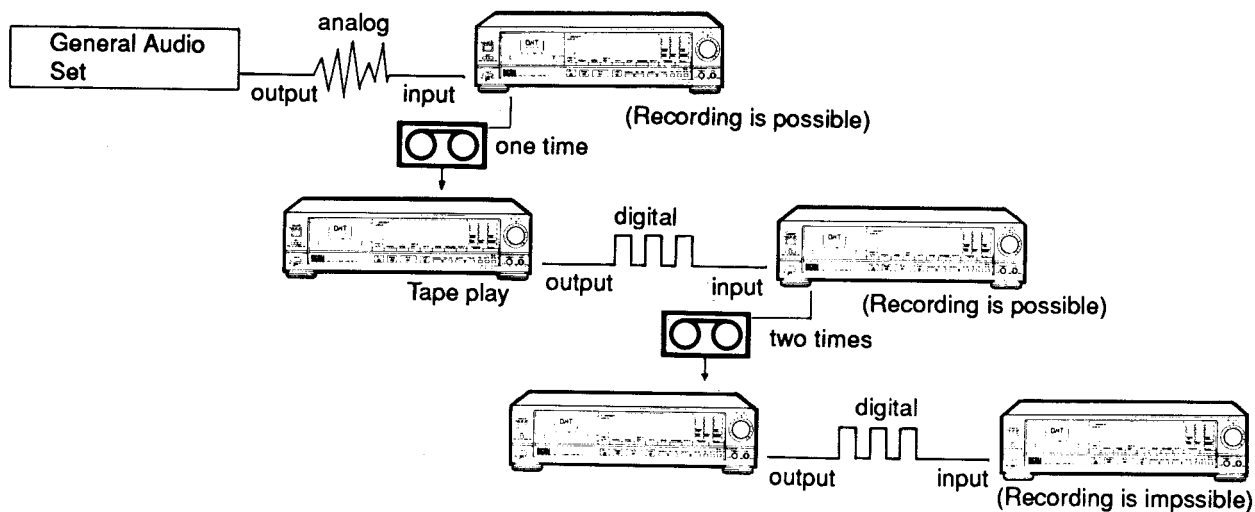
Example 2 When you record in the digital method through BS tuner.

- It is possible to record twice in the digital method on a tape recorded in the digital form according to receiver or broadcasting.



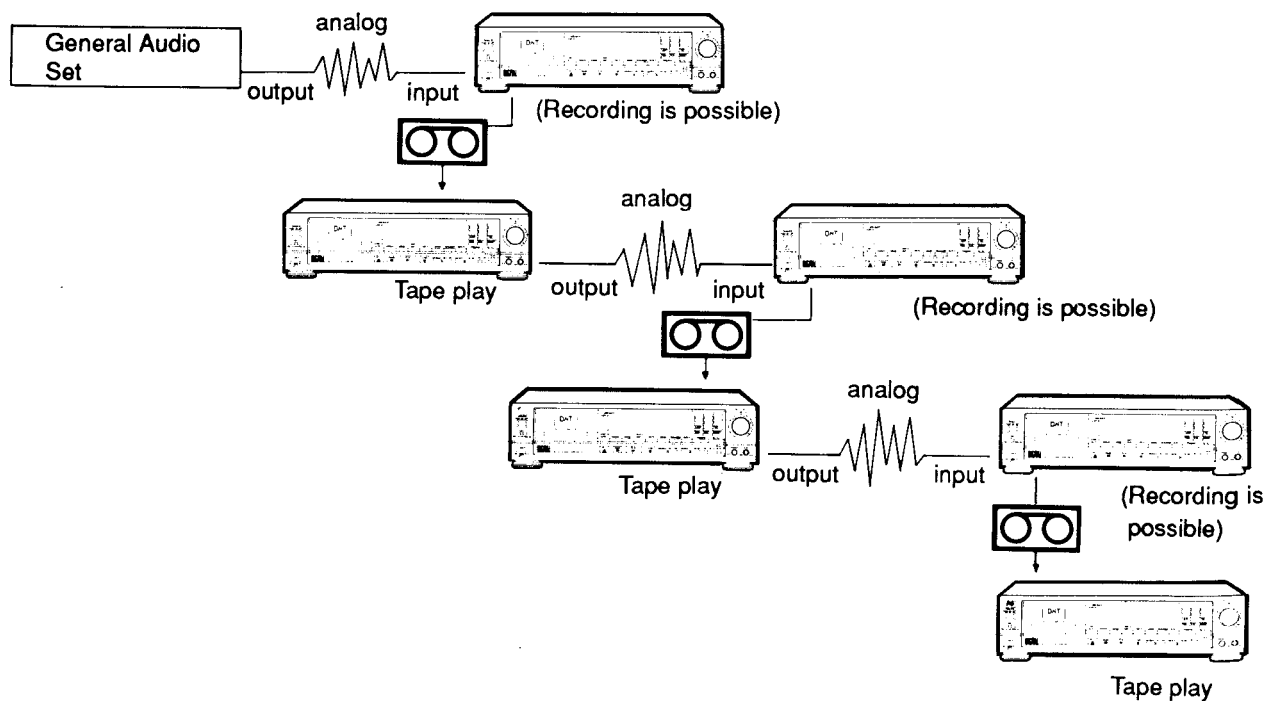
Example 3 When you record analog tape into the digital method.

- Two times of digital record can be possible but record on the digital method, again, is impossible.



Example 4 When you record tape recorded in analog form to the analog method.

- Just as the old DAT and normal cassette tape, recording is almost limitless. Connect to analog terminal if not recorded in a digital form.



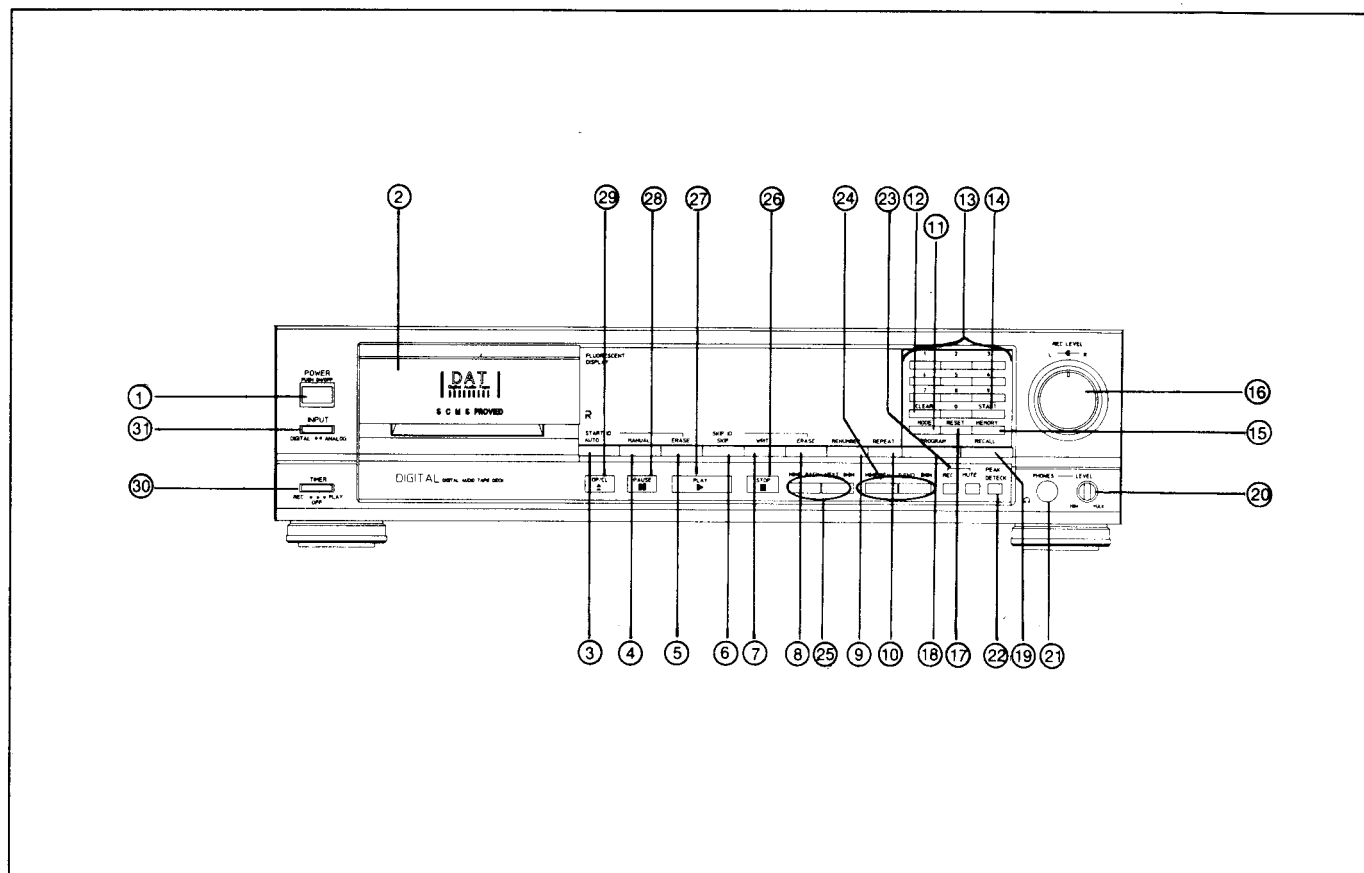
NOTE:

DAT soft tape is manufactured by the record manufacturing company.

4. LOCATION AND FUNCTION OF CONTROLS

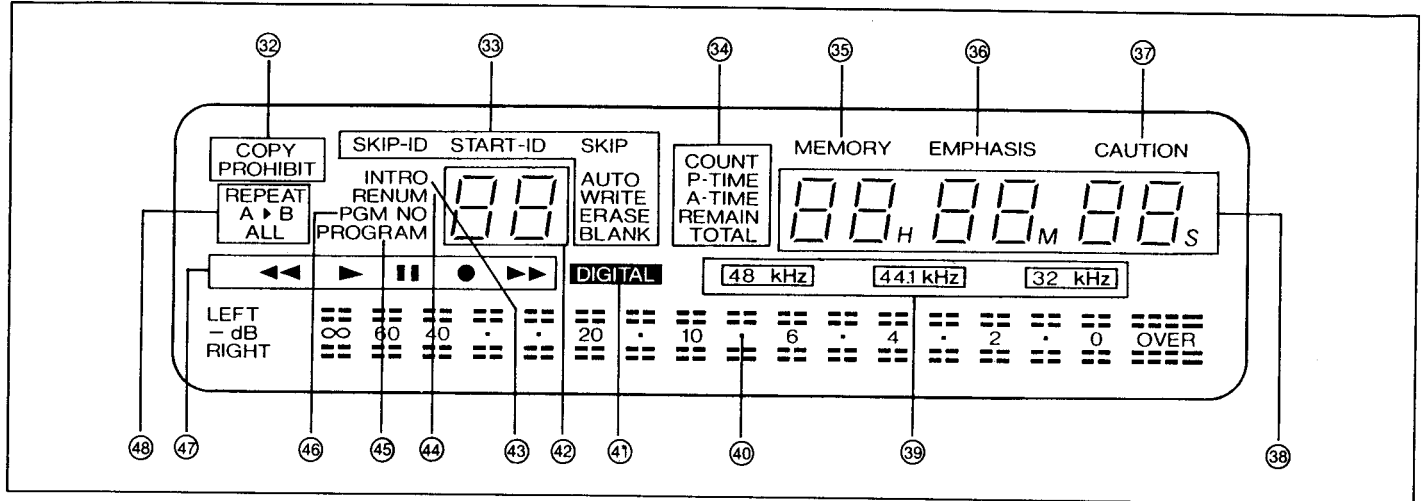
1) LOCATION OF CONTROLS

(1) FRONT



- | | |
|-------------------------|---------------------------|
| 1. POWER SWITCH | 16. RECORD LEVEL |
| 2. CASSETTE TRAY | 17. RESET BUTTON |
| 3. START ID (AUTO) | 18. PROGRAM SELECT BUTTON |
| 4. START ID (MANUAL) | 19. RECALL BUTTON |
| 5. START ID (ERASE) | 20. HEADPHONE LEVEL |
| 6. SKIP BUTTON | 21. HEADPHONE JACK |
| 7. SKIP ID WRITE BUTTON | 22. PEAK DETECT BUTTON |
| 8. SKIP ID ERASE BUTTON | 23. REC/REC MUTE BUTTON |
| 9. RENUMBER BUTTON | 24. F.FWD/REW BUTTON |
| 10. REPEAT BUTTON | 25. DETECT BUTTON |
| 11. COUNTER | 26. STOP BUTTON |
| PROGRAM TIME | 27. PLAY BUTTON |
| ABS TIME | 28. PAUSE BUTTON |
| 12. CLEAR BUTTON | 29. OPEN/CLOSE |
| 13. NUMBER BUTTON | 30. TIMER REC/PLAY |
| 14. START BUTTON | 31. INPUT SELECT SWITCH |
| 15. MEMORY BUTTON | |

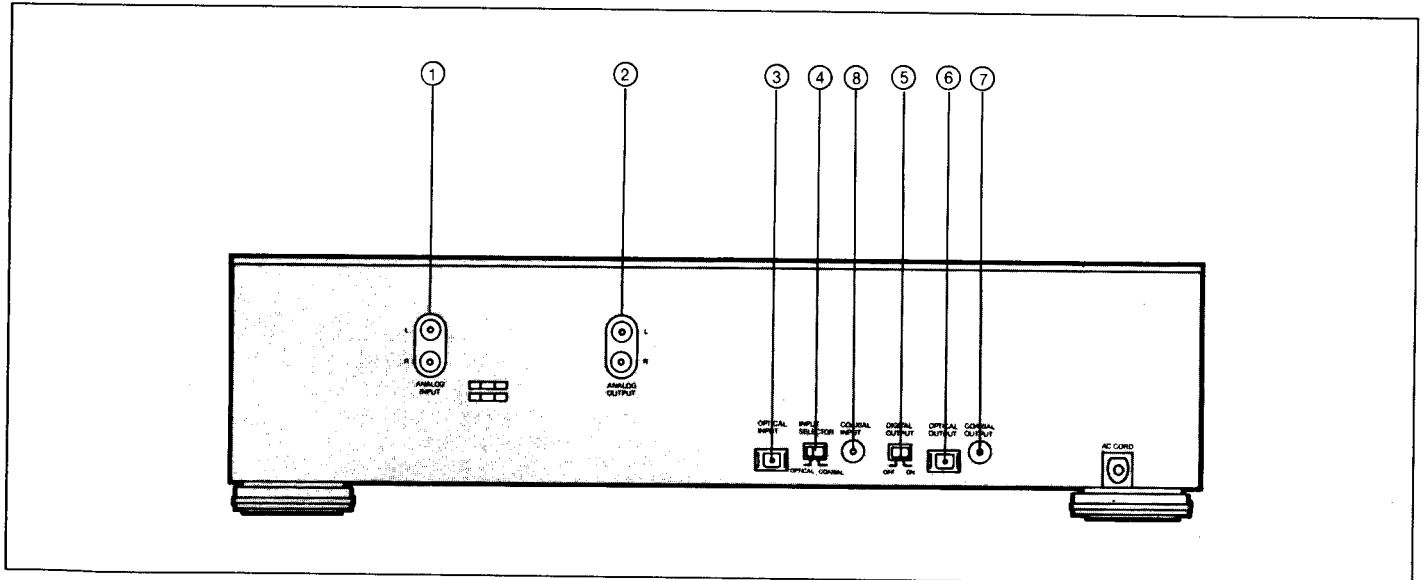
(2) DISPLAY



- 32. DIGITAL COPY PROHIBIT DISPLAY
- 33. START ID, SKIP ID DISPLAY
- 34. COUNTER DISPLAY
- 35. MEMORY DISPLAY
- 36. EMPHASIS DISPLAY
- 37. CAUTION DISPLAY
- 38. COUNTER
- 39. SAMPLING FREQUENCY DISPLAY
- 40. PEAK LEVEL METER

- 41. DIGITAL DISPLAY
- 42. PROGRAM NUMBER DISPLAY
- 43. INTRO SCAN DISPLAY
- 44. RENUMBER DISPLAY
- 45. PROGRAM DISPLAY
- 46. PROGRAM NO
- 47. TAPE OPERATION DISPLAY
- 48. REPEAT, PLAYBACK DISPLAY

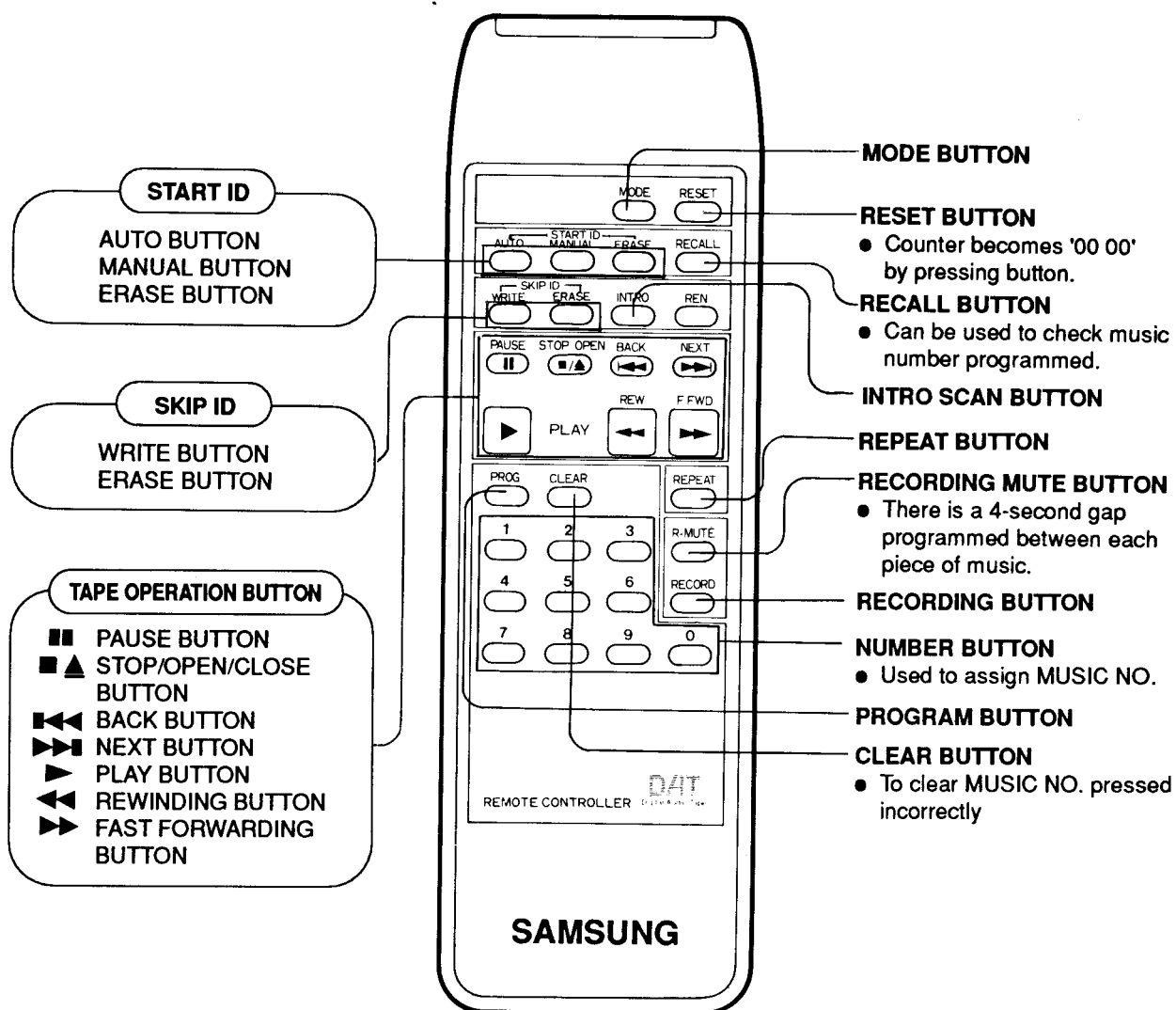
(3) REAR



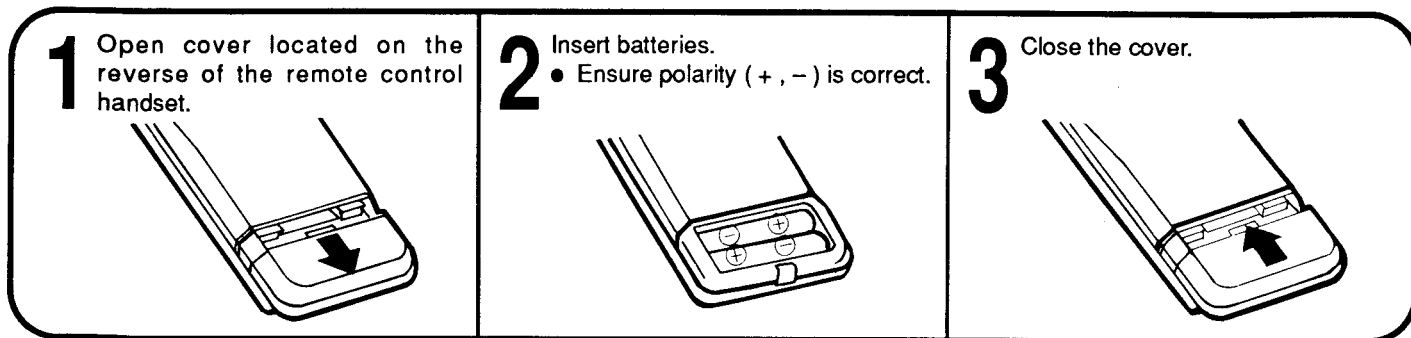
- 1. ANALOG INPUT
- 2. ANALOG OUTPUT
- 3. OPTICAL INPUT
- 4. OPTICAL OR COAXIAL INPUT SELECTOR SWITCH
- 5. DIGITAL OUTPUT ON/OFF SWITCH

- 6. OPTICAL OUTPUT
- 7. COAXIAL OUTPUT
- 8. COAXIAL INPUT

(4) REMOTE CONTROL HANDSET



HOW TO INSERT BATTERIES (1.5V BATTERY)



2) HOW TO OPERATE

PLAYBACK

1. Press Power
2. Insert a cassette with xx cover facing front.
3. Press play

CUE & REVIEW

If you press F/Forward or REW during play, the unit plays three times faster forward or backward with the unit still on play.

NEXT/BACK

If you press NEXT/BACK while on play, the unit playbacks from the beginning of the song. If the button is pressed on pause mode, the unit will stop at the beginning of the song. To release the pause mode, press the PAUSE button.

This function is effective only when START-ID is on.

Ex) If you want to listen to the third previous song, press BACK button four 4 times.

If you want to listen to the third later song, press NEXT four times.

STOP DURING play

1. If you want to stop playback --- Press STOP
2. If you want to PAUSE, --- press PAUSE
To release the pause, press "pause" again
3. If you want to take the tape out --- Press open/close button

PLAYBACK REPEAT

1. REPEAT : If you press "REPEAT" during play, the unit goes back to the beginning the song.
2. REPEAT ALL : If you press REPEAT twice, REPEAT ALL is displayed, and it goes back to the first song after the song from that currently being played to the last song are complete.

10 KEY

1. If you press the number desired with START-ID AUTO positioning, the unit registers numbers from which number you selected, automatically.

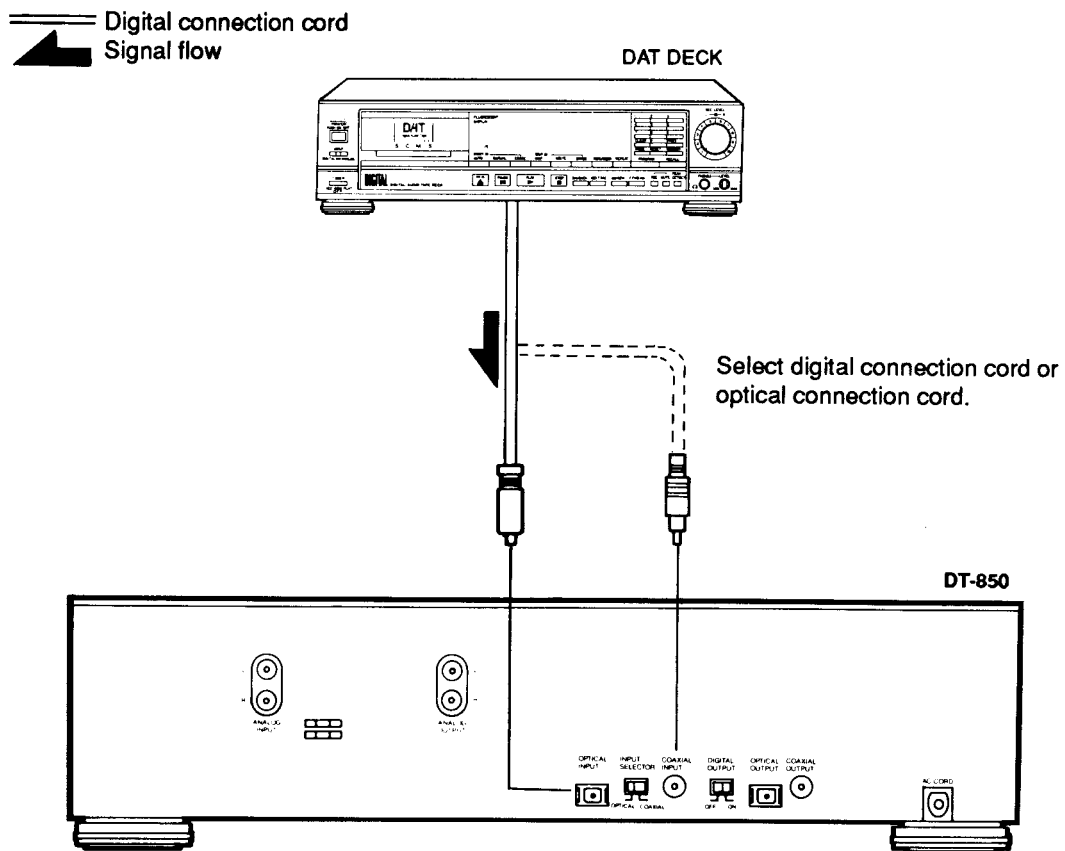
RECORD

1. Turn POWER on.
2. Insert a cassette tape.
3. Press REC BUTTON.
4. Adjust record level.
If copy preventing signals are in the tape (DAT), Digital record is impossible.
Be sure to set the Input Selector Switch to DIGITAL when recording digital signal.
Adjust REC VOLUME so that the maximum level is at less than 0 dB when recording ANALOG.
5. Press RECORD button again
Check the proper input selector setting (Analog/Digital) before recording.
Record level can't be adjusted manually when recording digital input signal.

3) SYSTEM CONNECTION

METHOD 1 Digital recording from DAT or CDP to DAT

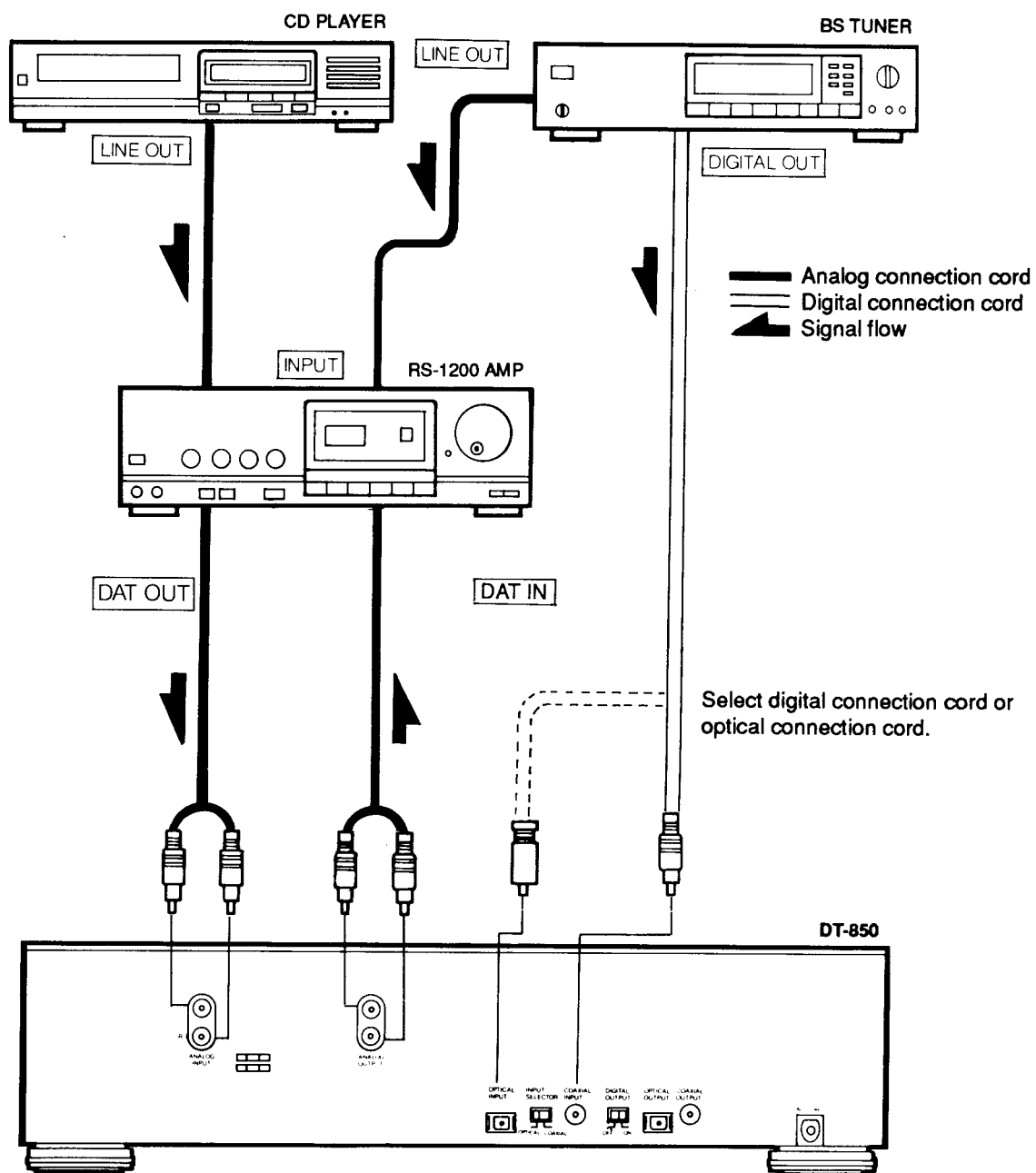
- Digital signal can be recorded directly without passing through the amplifier.
- BS TUNER or CDP can be connected instead of DAT deck to be played.



CAUTIONS

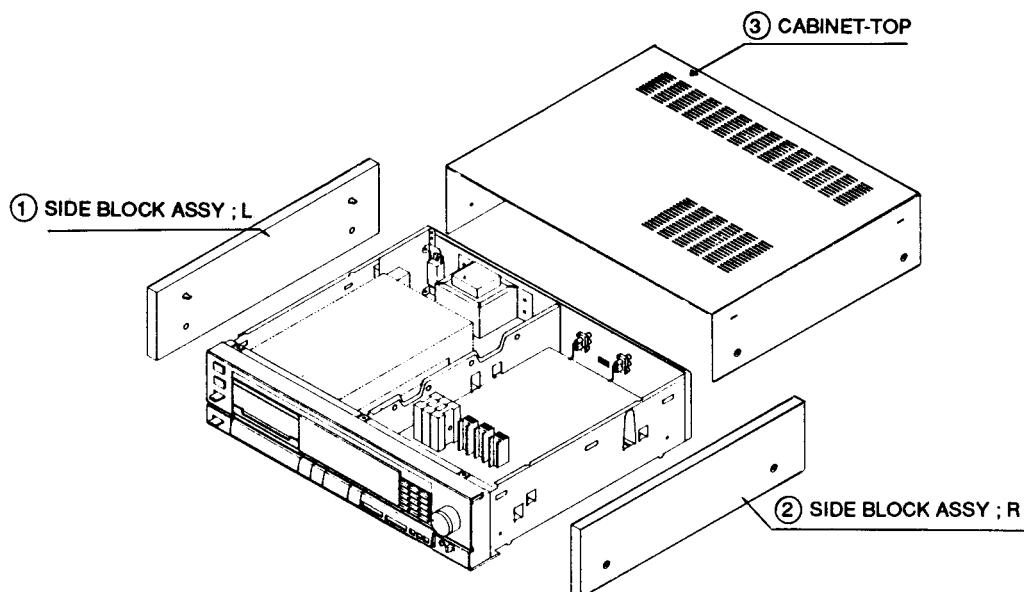
- Power must be off before connection.
- Insert connection plug completely. Incomplete connection can cause noise.
- Connect red colored plug to right channel and white colored plug to left channel.

METHOD 2 Connection with Amplifier, CD PLAYER and BS TUNER

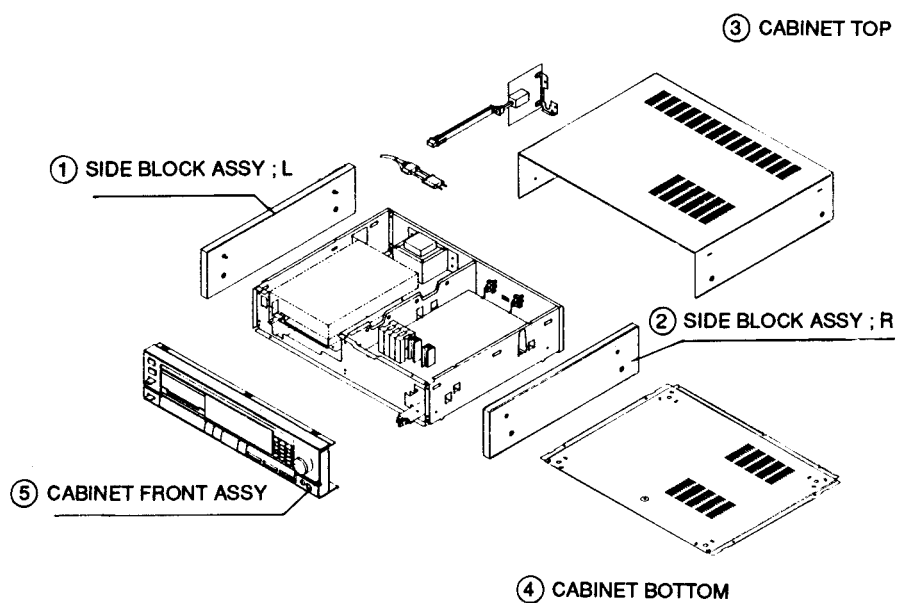


5. DISASSEMBLY PROCEDURE

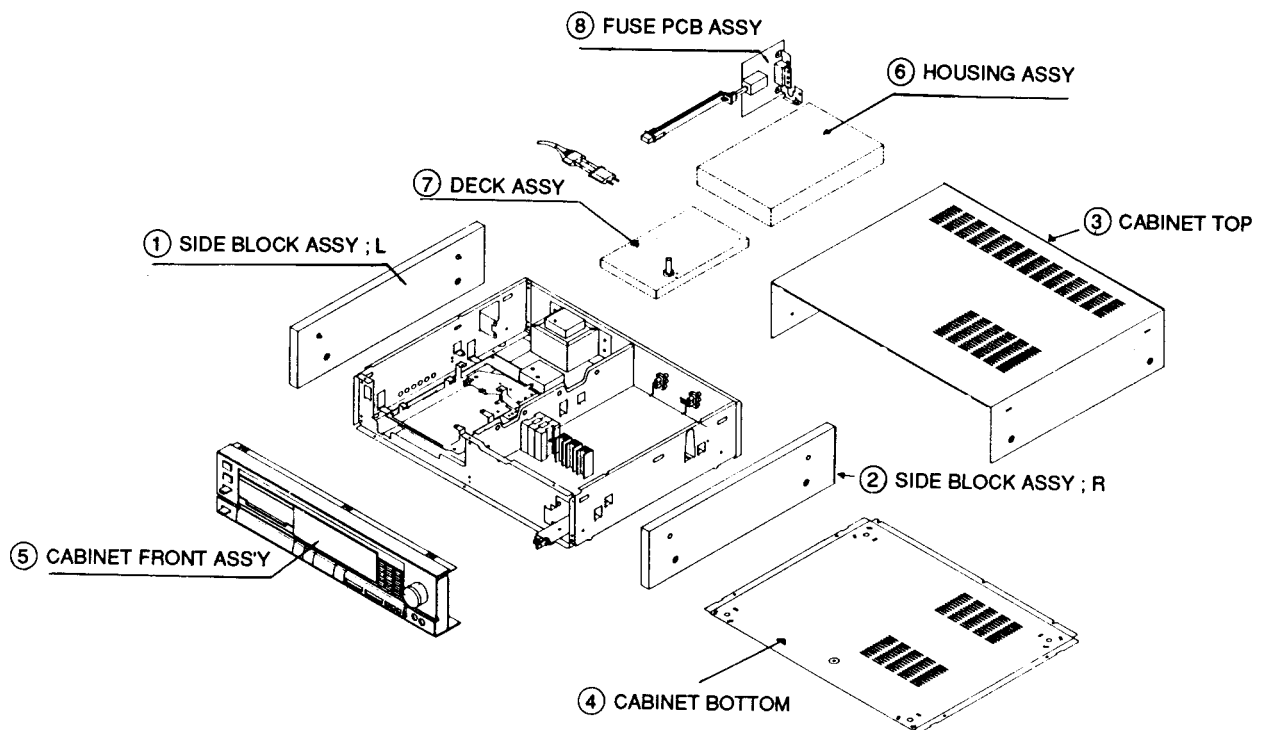
- (1) Remove Side Block (L)
Remove Side Block (R)
Remove Cabinet Top



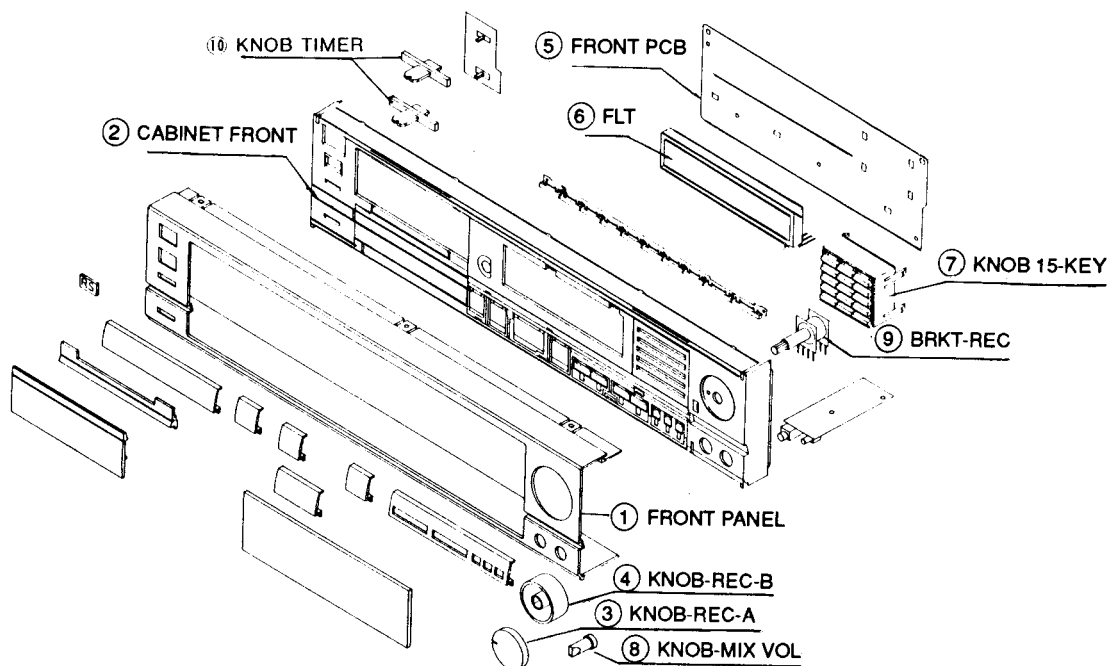
- (2) Remove Cabinet Bottom
Remove Cabinet Front Assembly



- (3) Remove Housing Assembly
Remove Deck Assembly
Remove Fuse PCB Assembly



- (4) Remove Cabinet Front Assembly
Remove REC-knob (A, B) and KNOB-MIX VOL. VOL from the Cabinet Front Assembly
Remove Front Panel and Cabinet Front
Remove FLT and Knob-15-Key from the Front PCB.

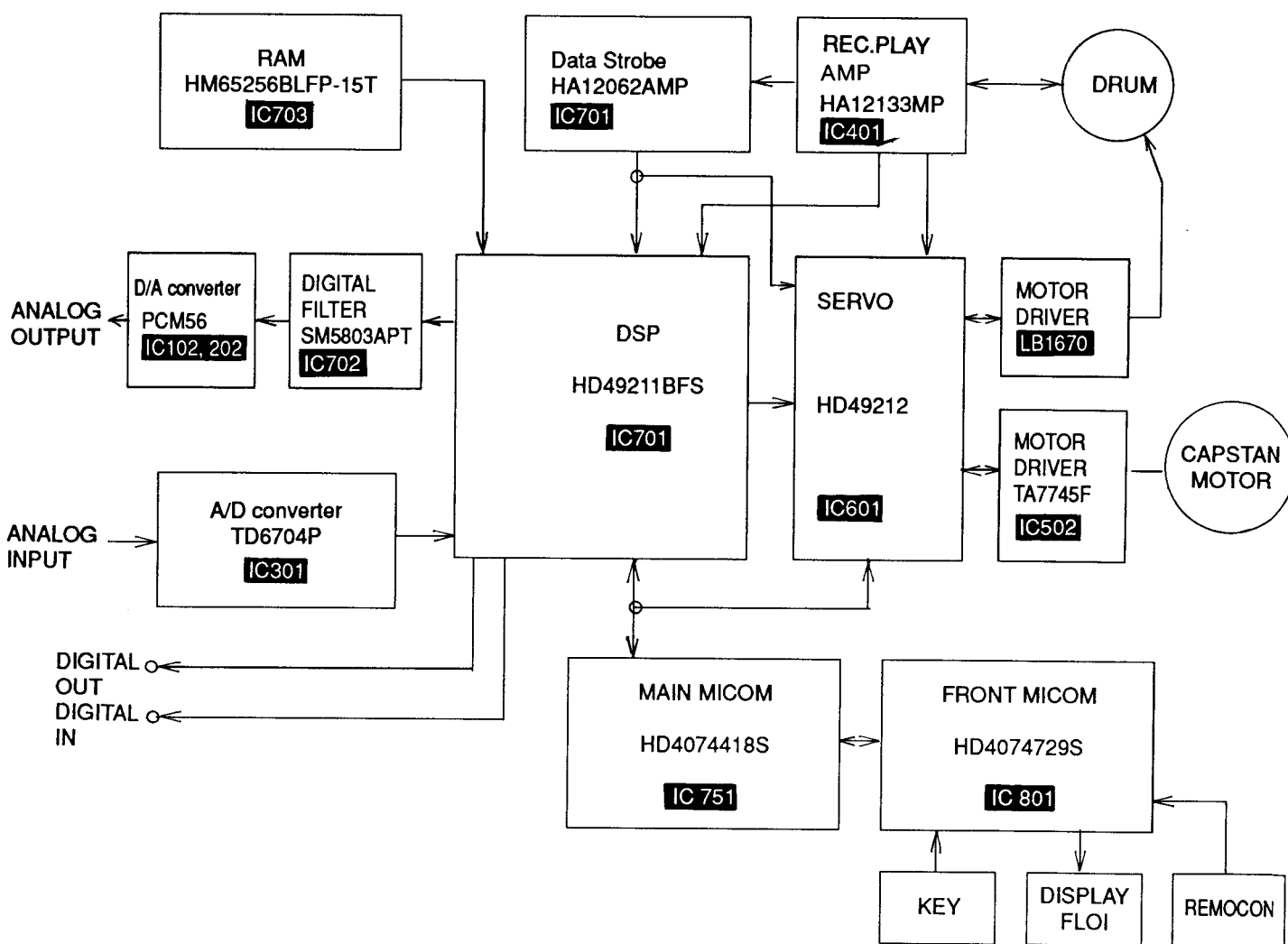


6. DESCRIPTION OF DAT OPERATION AND BLOCK DIAGRAM

DAT is a new type of audio device which enables the unit to record and playback higher quality of sound than a compact disc player, using a small cassette tape.

The basic operation of DAT is described as follows.

1) SYSTEM STRUCTURE



DAT BLOCK DIAGRAM

DAT is divided largely into Deck mechanism, which loads a tape, and servo circuitry, which controls the operation of deck mechanism, RF AMP circuitry, which amplifies the signals from the head and amplifies the signal to be recorded to the head, and DSP section which produces the recorded sound of high sound quality. Finally the audio signal handling section converts the digital signal to the normal analog signal and converts analog input signal from the outside audio equipments to the digital signal.

Following are the description of each section.

2) SERVO CIRCUITRY

(1) DRUM SERVO

Drum servo controls the drum speed by maintaining the FG (Frequency Generator) signal constantly, and controls phase by setting the position of Head properly toward the tape signal.

When a tape plays at high speed, relative speed control is performed for maintaining of a constant level in accordance with the tape rotation.

(2) CAPSTAN SERVO

CAPSTAN SERVO consists of velocity control, ATF (Automatic Track FINDING) Control, and phase control.

(3) REEL SERVO

When a tape plays/rotates at normal speed, reel servo circuitry controls speed for a safe rolling status and for back tension of the supplying reel.

3) DSP (DIGITAL SIGNAL PROCESSING)

(1) RECORDING SECTION

The signals converted by the A/D converter and the signals that was input through the digital input terminal (add sub code) which includes song number, elapsed time start indicator, etc.

After getting through these procedures, ETM (Eight to Ten Modulation) procedure is to be performed.

(2) PLAYBACK SECTION

The signals read from the tape is to be processed for ETM modulation and corrects error using parity in the reverse order described above (recording procedure).

Then signals are output after dividing the pure signal and sub code signals.

4) A/D D/A CONVERTER

(1) A/D CONVERTER (Analog to Digital converter)

It converts analog signals, which was input through the line-in, to the digital signal

(2) D/A converter (Digital to Analog)

It converts digital audio data, which was output from the DSP, to audio signal in the form of analog.

5) MICOM

(1) MAIN MICOM

It controls the deck mechanism operation, DSP, A/D, and D/A by detecting the status of the deck mechanism through the various sensors of the deck mechanism or command of front MICOM.

(2) FRONT MICOM

It transfers the key (functions) input to the main MICOM and Front MICOM is displayed on FLT in accordance with the function key or unit.

7. ADJUSTMENT

1) BEFORE MAKING ADJUSTMENT

- (1) Clean up Head and tape path touch area (tape guide, drum, capstan shaft, pinch roller)
- (2) Warm up the unit for a couple of minutes before making adjustment
- (3) Set signal level to 0 dB +2rms
- (4) Connect audio signal output terminal to 47K ohm.
- (5) Use 10 : 1 oscilloscope damping probe.

2) TEST TAPE

- (1) Tracking Adjustment Tape : TY-7251
- (2) Level Adjustment Tape : TY-7111
- (3) Torque Meter : TW-7131
- (4) Audio Function Measuring Tape (TY-7551)
- (5) Blank Tape

3) ADJUSTMENT EQUIPMENTS

- (1) Oscilloscope
- (2) Frequency Cunter
- (3) Short Connector
- (4) Adjustment Jig
- (5) Error Counter (or substitute -- Oscilloscope)
- (6) Audio Analyzer

4) FUNCTION SETTING BEFORE ADJUSTMENT

- (1) TIMER - OFF
- (2) Digital/Analog selector - Analog
- (3) START IN AUTO - AUTO
- (4) SKIP ID - OFF
- (5) REC Volume - minimum
- (6) Headphone Volume - Mechanical center

Place the front of the unit facing towards you after upper and bottom cabinet are disassembled.

5) ADJUSTMENT POINT

(1) DIGITAL SERVO ADJUSTMENT : Upside down the unit and open the Bottom Case.

ITEM	PURPOSE	SYMPTOM	EQUIPMENTS	TEST POINT	ADJUSTMENT POINT
① TACH adjustment	proper record position in accordance with tape format	Sound Skip due to disarrayed ATF SUB CODE is not precise during or AFTER Recording	Oscilloscope. Tracking Adjustment Tape (TY-7251)	CH1 ENV(TP605) GND(TP. GND) CH2 TACH(TP601) GND(TP.GND)	VR606
② ATF GAIN adjustment	ATF Plot signal level adjustment	Sound skip due to disarrayed ATF	Oscilloscope. Test Tape (TY-7111)	CH1 PLT2(TP604) TP GND COMMON CH2 SWH(TP603)	VR605 head A VR604 head B
③ Envelop detect level adjustment	RF signal presence check to prevent and malfunction	Search Malfunction	● Oscilloscope ● TEST TAPE (TY-7111)	CH1 ENV(TP605) ENVOUT(TP602), TPGND (COMMON) CH2 SWH(TP603)	VR603
④ Record Current Adjustment	Optimum Level	Sound Skip due to disarrayed ATF Error rate is aggravated	● Oscilloscope ● TEST TAPE (TY-7111) ● blank Tape. (two piece)	CH1 RF UNIT TP4 01 TP451 ENV (TP605) PLT2 (TP604) CH2 SWH(TP603) CH1, CH2 GND COMMON TPGND	VR401 : B-CH 1 ~ 5 MHz current Adjustment VR402 : B-CH 130 KHz current Adjustment VR451 : A-CH 1 ~ 5 MHz current Adjustment VR452 : A-CH 130 KHz current Adjustment

(2) DSP ADJUSTMENT

ITEM	PURPOSE	SYMPTOM	EQUIPMENTS	TEST POINT	ADJUSTMENT POINT
① PLL frequency adjustment	Correct digital signal reading	No Playback Intermittent sound No signal in LevelMeter	● Frequency Counter ● Short Connector ● TY-7551 or MUSIC Tape	TP702(PDCK) GNP(TP GND)	L706 (Data strobe shield case)
② adjustment	Correct data producing	Intermittent Sound	● TY-7551 ● oscilloscope ● Error rate counter	CH1 FLAG pin of CN704 CH2 FSYNC pin of CN704	VR403 (RF UNIT)
③ ASPC phase error adjustment	Correct data producing	Intermittent Sound	● TY-7551 ● oscilloscope ● Error rate counter	CH1 FLAG pin of CN704 CH2 FSYNC pin of CN704	VR701 (shield case)

(3) AUDIO SECTION ADJUSTMENT

ITEM	PURPOSE	SYMPTOM	EQUIPMENTS	TEST POINT	ADJUSTMENT POINT
① Play level adjustment	proper level (2Vrms)	Inconstant Output	● Volt Meter ● RCA-BNC cable ● TY-7551	ANALOG OUTPUT	VR103 (L Ch) VR203 (R Ch)
② D/A MSB adjustment	Improve distortion rate	Inproper Dynamic Range S/N, and Distortion	● TY-7551 ● Error rate counter	Fig. 2	VR102 (L Ch) VR202 (R Ch)
③ comperator voltage adjustment	Check comparator voltage in A/D converter	Inproper R/P S/N ratio and THD	● Oscilloscope or Tester	TP301	VR301
④ D/A OFFSET voltage adjustment	Adjust D/A OFFSET VOLTAGE	Inproper R/P S/N ratio and high distortion. Level Meter is on when soundless signal is in	● Oscilloscope ● BLANK Tape ● 600 Terminator	TP101 (L-Ch) TP201 (R-Ch)	VR302
⑤ adjustment specification check	Check proper adjustments of A/D		● Error rate counter ● Audio ANALYZER ● oscilloscope ● BLANK tape	Fig. 3	VR301

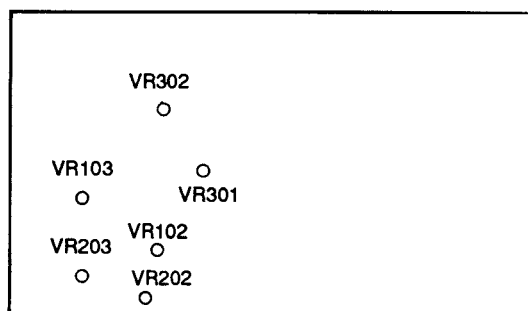


Fig. 1 (ANALOG PCB ADJUSTMENT POINT)

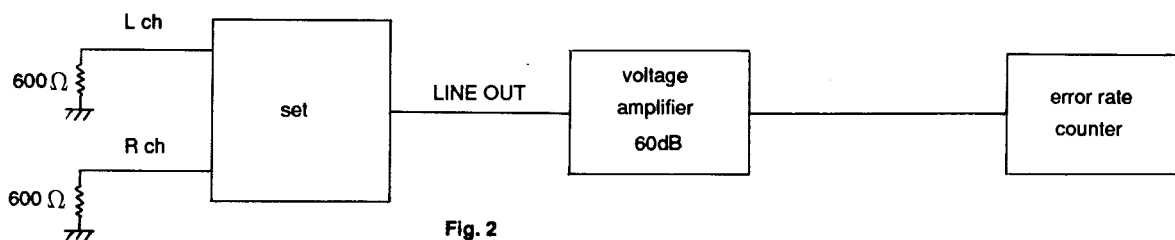


Fig. 2

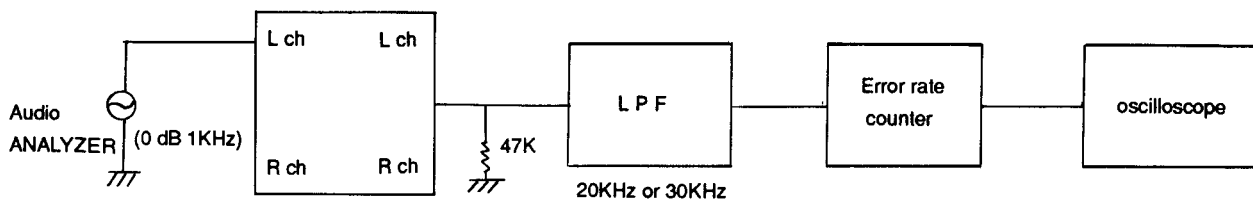
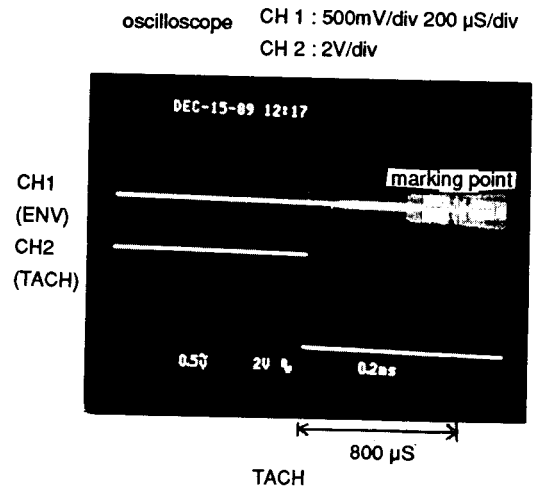


Fig. 3

6) ADJUSTMENT

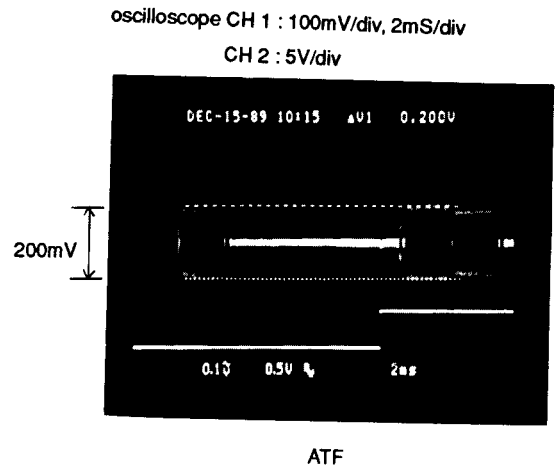
(1) TACH ADJUSTMENT

- ① Insert a test tape (TY-7251) and play.
- ② Adjust VR606 so that the TACH waveform is at $800 \mu\text{S} \pm 20 \mu\text{S}$.
(until it oscillates up to the marking point of RF signal)



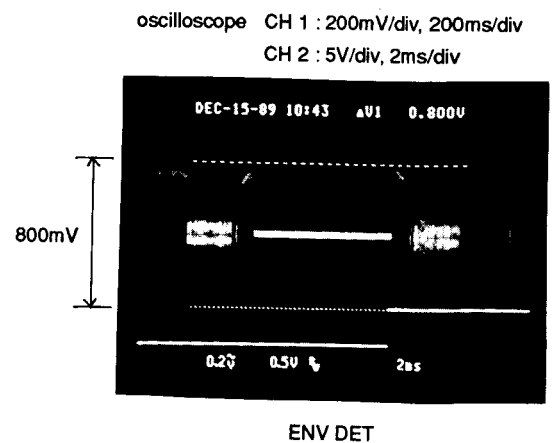
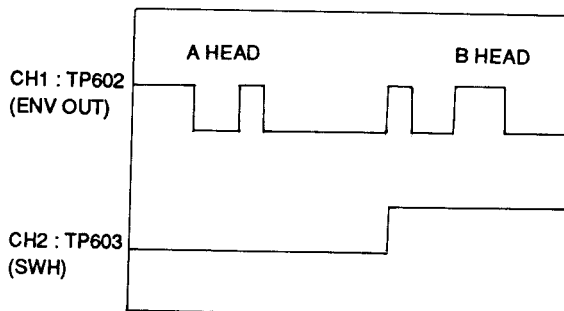
(2) ATF GAIN ADJUSTMENT

- ① Insert a test tape (TY-7111) and play.
- ② Adjust VR604 (Head A) and VR605 (Head B) so that the 130KHz of pilot signal level of a, b is at $200\text{mV} \pm 20\text{mV}$.
(Level difference of a and b should be less than 20mV)



(3) ENV DET LEVEL ADJUSTMENT

- ① Insert TY-7111 and play.
- ② Adjust VR605 so that the output level of a, b is at $800\text{mV} \pm 100\text{mV}$.
- ③ If the level difference is too big, adjust VR so the bigger level corresponds to the spec.
- ④ Connect CH1 (ENV OUT) to TP602 and check if waveform oscillates normally.

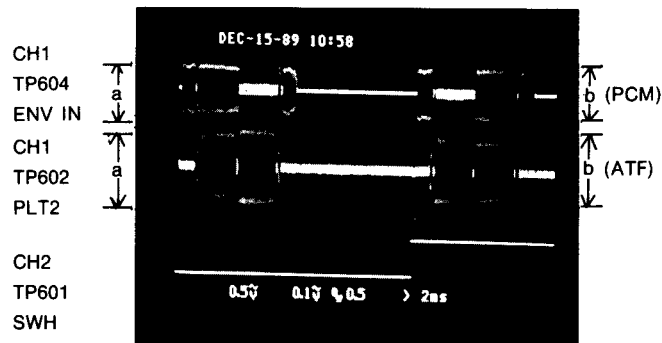


(4) RECORD CURRENT ADJUSTMENT

① PCM ADJUSTMENT

- Insert a blank tape and record soundless signal.
- Adjust VR401 so that the waveform of TP401 is at $260\text{mV} \pm 10\text{mV}$.
(Clockwise : increase Counter clockwise : decrease)
Adjust VR451 so that the waveform of TP451 is at $260\text{mV} \pm 10\text{mV}$.
- Connect Oscilloscope to TP605.
- Play the TY-7111 and check the waveform of TP605
(Remember the value)
- Record soundless signal on a blank tape.
- Stop recording and check if the playback waveform is within $+40, -30\%$ of a, b (TP 605 waveform)

OSCILLOSCOPE CH1 : 0.5V/div, 3ms/div(PCM)
[CH1 : 100mV/div, 3ms/div] (ATF)
CH2 : 5V/div



A HEAD

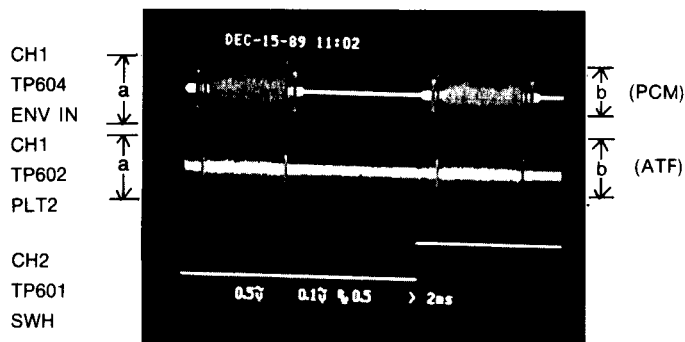
B HEAD

* a, b : 260mV

② ATF SECTION ADJUSTMENT

- Record soundless signal.
- Connect CH1 of oscilloscope to TP604.
- Check if the recorded signal waveform is a $200\text{mV} \pm 20\%$.
- Adjust VR452 (Head A) and VR402 (Head B) so that the waveform correspond to the spec (Repeat a, c)
(Clockwise : increase Counter clockwise : decrease)
- Perform ATF adjustment after the PCM adjustment is complete.

OSCILLOSCOPE CH1 : 0.5V/div, 3ms/div(PCM)
[CH1 : 100mV/div, 3ms/div] (ATF)
CH2 : 5V/div



A HEAD

B HEAD

* a, b : 200mV

(5) PLL FREQUENCY ADJUSTMENT

- Insert a TY-7551 or normal tape and stop.
- Short CN705 with SHORT CONNECTOR.
- Connect TP702 to COUNTER Probe.
- Adjust L706 so that the Frequency Counter reads $9.408 \pm 0.01\text{MHz}$.

(6) PB EQ ADJUSTMENT

- ① Insert TY7551 and play.
- ② Adjust VR403 of RF unit so that the FLAG signal is at the minimum.

(7) ASPC PHASE ADJUSTMENT

— When using oscilloscope —

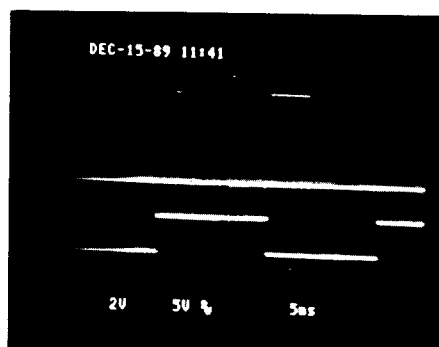
- ① Insert test tape (TY-7551) and play.
- ② Adjust VR701 so that the error flag of CH1 is at the minimum.

— When using Error Counter —

- ① Connect Error Counter to CN704 and set counter to 10 ~ 15sec.
- ② Adjust so the error ratio is at the minimum (less than below 5×10^{-3}).

CH 1
ERROR
FLAG

CH 2
FSYNC



OSCILLOSCOPE
CH1 : 2V/div, 5mS/div
CH2 : 5V/div
— FLAG signal

(8) PLAYBACK LEVEL ADJUSTMENT

- ① Connect 47 Kohm resistor to the output terminal of a unit.
(or connect 47 Kohm to RCA-BNC cable)
- ② Insert TY-7551 and play 0 dB 1KHz of signal (No1 song)
- ③ Adjust VR103 (L-ch) and VR203(R-ch) so that the output level is at 2Vrms.

(9) DA MSB ADJUSTMENT

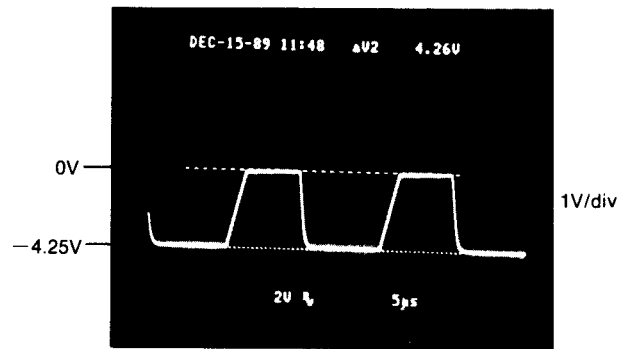
- ① Connect line-in to 600ohm terminator.
- ② Play the program No 1 (– 60 dB 1KHz) of the TY-7551 and adjust so the distortion is at the minimum.

(10) COMPARATOR NORMAL VOLTAGE ADJUSTMENT

- ① Connect line-in to the 600ohm terminator.
- ② Adjust VR301 so the voltage is at $-150\text{mV} \pm 100\text{mV DC}$.

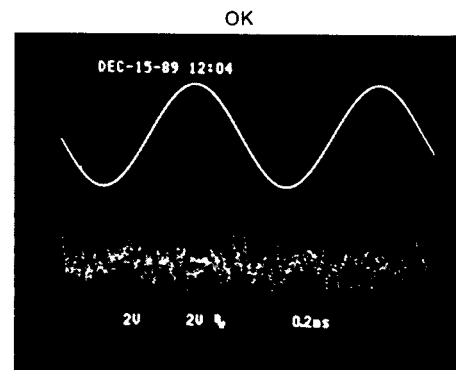
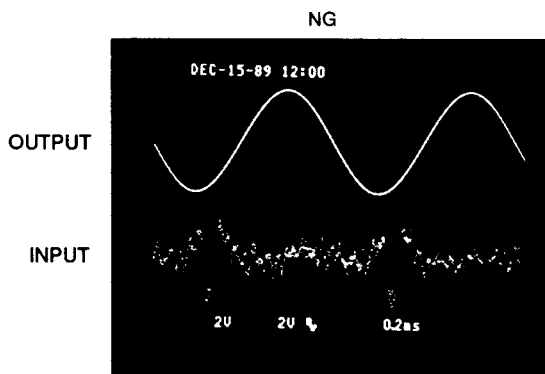
(11) A/D OFFSET ADJUSTMENT

- ① Insert a blank tape after the adjustment (10) is complete.
- ② Check if the line-in is connected to the 600ohm terminator.
- ③ Press REC.
- ④ Connect TP101 or TP201 to the Oscilloscope and adjust voltage to $-4.25V$.



(12) ADJUSTMENT PROPERNESS CHECK

- ① Apply 1KHz 0 dB of signal to the line-in.
- ② Connect line-out to the distortion Meter (Use 30KHz LPF).
- ③ Leave the unit REC off.
- ④ Adjust REC volume at the maximum so that the clipping is not occurred.
- ⑤ Check if the output of the distortion meter is normal.
If it is not normal, adjust VR301 so the distortion is at the minimum. (below 0.008%)



8. IC VOLTAGE LIST

IC601
HD49212

1	4.8
2	0.0
3	0.0
4	0.1
5	2.1
6	0.0
7	1.6
8	2.2
9	2.4
10	0.0
11	4.4
12	1.4
13	2.3
14	2.2
15	0.0
16	0.0
17	1.7
18	2.4
19	2.4
20	2.4
21	2.4
22	0.0
23	1.6
24	2.4
25	1.9
26	2.4
27	.
28	0.0
29	3.0
30	0.0
31	.
32	.
33	2.3
34	2.4
35	0.0
36	3.0
37	0.0
38	2.0
39	0.0
40	2.4
41	0.0
42	2.3
43	1.8
44	2.4
45	4.8
46	1.5
47	2.3
48	2.3
49	2.3
50	2.3
51	2.4
52	1.6
53	2.4
54	2.4
55	1.9
56	2.4
57	3.0
58	0.0
59	4.8
60	4.8
61	4.8
62	4.8
63	
64	
65	2.0
66	2.0
67	1.7
68	3.9
69	2.3
70	2.3
71	3.0
72	0.1
73	2.8
74	2.0
75	3.0
76	4.8
77	4.8
78	4.8
79	4.8
80	0.0

IC602
LM224N

1	2.8
2	2.5
3	2.5
4	6.1
5	2.5
6	2.5
7	2.1
8	1.6
9	2.5
10	2.5
11	0.0
12	2.5
13	2.5
14	2.6

IC603
LN258

1	4.9
2	0.8
3	0.8
4	0.0
5	1.6
6	1.6
7	5.1
8	6.1

IC752
TA7288

1	0.0
2	0.5
3	0.5
4	0.0
5	0.0
6	0.0
7	6.8
8	6.8
9	6.8
10	0.5

IC754
LM293N

1	0.0
2	2.0
3	0.3 ~ 0.4
4	0.0
5	0.2
6	2.0
7	0.0
8	5.0

IC701
HD49211

1	0.0
2	0.1
3	4.9
4	0.0
5	0.0
6	0.0
7	2.3
8	2.3
9	0.0
10	4.3
11	5.0
12	2.3
13	3.2
14	3.3
15	3.6
16	3.4
17	3.5
18	3.6
19	0.0
20	2.7
21	3.1
22	0.0
23	5.0
24	0.0
25	0.0
26	2.4
27	2.4
28	3.7
29	1.8
30	5.0
31	1.2
32	1.2
33	1.2
34	0.0
35	1.2
36	1.3
37	1.2
38	1.2
39	0.0
40	3.6
41	2.4
42	3.1
43	3.3
44	3.4
45	3.2
46	3.5
47	3.4
48	3.4
49	3.4
50	3.3
51	3.4
52	3.4
53	2.4
54	2.4
55	4.4
56	0.6
57	1.1
58	0.0
59	0.0
60	0.0
61	0.0
62	0.0
63	5.0
64	2.4
65	.
66	1.8
67	0.9
68	0.9
69	0.0
70	0.0
71	2.5
72	2.4

IC702
HA12062AMP

1	3.2
2	
3	5.0
4	5.0
5	3.2
6	1.1
7	0.0
8	0.0
9	2.1
10	2.1
11	1.1
12	3.8
13	5.0
14	
15	3.7
16	3.1
17	0.8
18	2.0
19	0.0
20	
21	4.4
22	3.3
23	3.5
24	3.2
25	2.0
26	0.0
27	1.1
28	5.0

IC705
SM5803APT

1	2.5
2	2.5
3	0.0
4	5.0
5	0.0
6	2.4
7	2.5
8	0.0
9	2.4
10	5.0
11	5.0
12	5.0
13	0.0
14	5.0
15	0.0
16	0.0
17	0.0
18	5.0
19	2.5
20	2.5
21	0.0
22	5.0
23	3.7
24	3.7
25	3.7
26	1.3
27	2.5
28	2.5

IC703
HM65256BLFP-15T

1	2.5
2	3.4
3	3.4
4	3.6
5	3.3
6	3.5
7	3.4
8	3.2
9	2.4
10	3.7
11	1.4
12	1.4
13	1.4
14	0.0
15	1.4
16	1.4
17	1.4
18	1.4
19	1.4
20	1.1
21	3.4
22	0.6
23	3.4
24	3.4
25	3.4
26	2.4
27	4.5
28	5.0

IC704
SN74LS624

1	0.0
2	0.0
3	1.5
4	2.0
5	4.9
6	4.4
7	0.0
8	0.1
9	5.0
10	0.1
11	0.1
12	0.1
13	4.6
14	5.0

IC706
TC74HC00AP

1	2.5
2	2.5
3	2.5
4	2.5
5	2.5
6	2.5
7	0.0
8	5.0
9	0.0
10	2.5
11	2.5
12	5.0
13	2.4
14	5.0

IC707
TC74HCU04AP

1	5.0
2	0.0
3	5.0
4	0.0
5	5.0
6	0.0
7	0.0
8	0.7
9	2.9
10	2.9
11	2.6
12	0.0
13	5.0
14	5.0

IC753
TC74HC14

1	
2	
3	
4	
5	0.0
6	5.0
7	0.0
8	5.0
9	0.0
10	
11	
12	
13	
14	5.0

IC751
HD4074418S

1	4.9	17	0.0	33	4.9	49	0.0
2	5.0	18	3.0 ~ 3.3	34		50	4.9
3	0.0	19	2.2 ~ 2.8	35		51	2.2
4	0.5	20		36	5.6	52	2.3
5	0.5	21	2.4 ~ 2.7	37	0.0	53	0.0
6	4.9	22	2.4 ~ 2.7	38	0.0	54	0.0
7	4.9	23		39	0.0	55	0.0
8	0.0	24	3.6	40	0.0	56	0.0
9	4.3	25	0.1	41	0.0	57	0.0
10	0.0	26	2.4	42	5.0	58	0.0
11	0.0	27	0.0	43	0.0	59	0.0
12	4.9	28	5.0	44	0.0	60	0.0
13	4.9	29	0.6	45	0.0	61	0.0
14	4.9	30	0.1	46	4.9	62	0.0
15	5.0	31	4.6	47	0.1	63	0.0
16	0.0	32	5.0	48	0.0	64	0.0

**IC502
TA7745F**

1	0.5
2	2.4
3	2.4
4	2.4
5	2.4
6	2.4
7	2.4
8	5.0
9	0.6
10	0.6
11	0.7
12	0.0
13	0.7
14	0.0
15	0.7
16	5.0

**IC503
LB1670**

1	0	16	0
2	0	17	0
3	0	18	0.2
4	0.5	19	1
5	5.0	20	0.5
6	8.5	21	0.7
7	2.0	22	0.5
8	0	23	0.5
9	8.5	24	0
10	2	25	2
11	8.5	26	2
12	2	27	0
13	0.3	28	6.0
14	0	29	0
15	0	30	0

**IC101
NJM2082S**

1	12.0
2	0.0
3	0.0
4	0.0
5	-12.0
6	0.0
7	0.0
8	0.0
9	12.0

**IC201
NJM2082S**

1	12.0
2	0.0
3	0.0
4	0.0
5	-12.0
6	0.0
7	0.0
8	0.0
9	-12.0

**IC102
PCM-56P**

1	-5.0
2	0.0
3	5.0
4	0.0
5	1.2
6	3.6
7	2.6~3.3
8	-5.0
9	0.0
10	0.0
11	0.0
12	0.0
13	0.0
14	-2.5
15	2.0
16	5.0

**IC103
NJM2082S**

1	9.0
2	0.0
3	0.0
4	0.0
5	-9.0
6	0.0
7	0.0
8	0.0
9	9.0

**IC301
TD6704P**

1	5.0
2	-9.8
3	4.2
4	4.2
5	4.1
6	5.0
7	2.5
8	2.5
9	0.0
10	3.1
11	5.0
12	0.0
13	4.0
14	0.0
15	-9.4
16	-9.7
17	-2.4
18	0.4
19	0.0
20	0.0
21	0.0
22	0.0
23	0.0
24	0.0
25	0.0
26	0.4
27	2.6
28	5.0

**IC304
NJM4556S**

1	2.5
2	0.0
3	0.0
4	0.0
5	-8.5
6	0.0
7	0.0
8	0.0
9	8.5

**IC902
MC7912**

1	0.0
2	-18.0
3	-12.0

**IC907
MC7805**

1	10.0
2	0.0
3	5.0

**IC903
MC7805**

1	12.0
2	0.0
3	5.0

**IC908
MC7805**

1	10.0
2	0.0
3	5.0

**IC303
NJM082S**

1	12.0
2	2.4
3	2.4
4	0.0
5	-12.0
6	0.0
7	2.4
8	2.4
9	12.0

**IC904
MC79M05**

1	0.0
2	-12.0
3	-5.0

**IC202
PCM-56P**

1	-5.0
2	0.0
3	0.0
4	0.0
5	1.2
6	3.6
7	2.4
8	-4.9
9	0.0
10	0.0
11	0.0
12	0.0
13	0.0
14	-2.4
15	2.4
16	5.0

**IC203
NJM2082S**

1	9.0
2	0.0
3	0.0
4	0.0
5	-9.0
6	0.0
7	0.0
8	0.0
9	9.0

**IC302
MC78M05**

1	12.0
2	0.0
3	5.0

**IC901
7812**

1	0.0
2	-18.0
3	-12.0

**IC905
MC7806**

1	10.0
2	0.0
3	6.5

**IC909
TC74MC04**

1	.
2	0.0
3	0.0
4	5.0
5	5.0
6	0.0
7	0.0
8	5.0
9	0.0
10	5.0
11	0.0
12	5.0
13	0.0
14	5.0

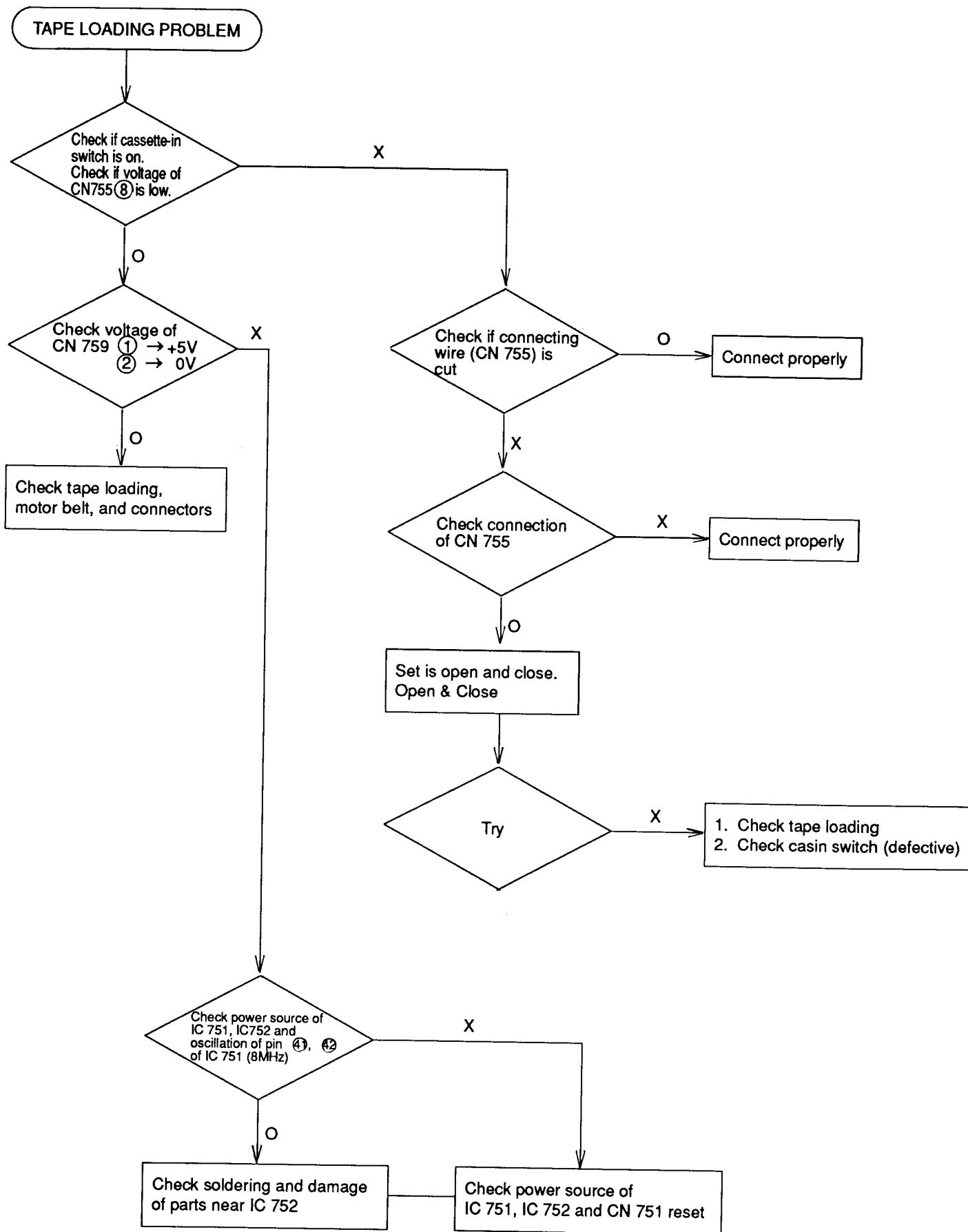
**IC906
MC7806**

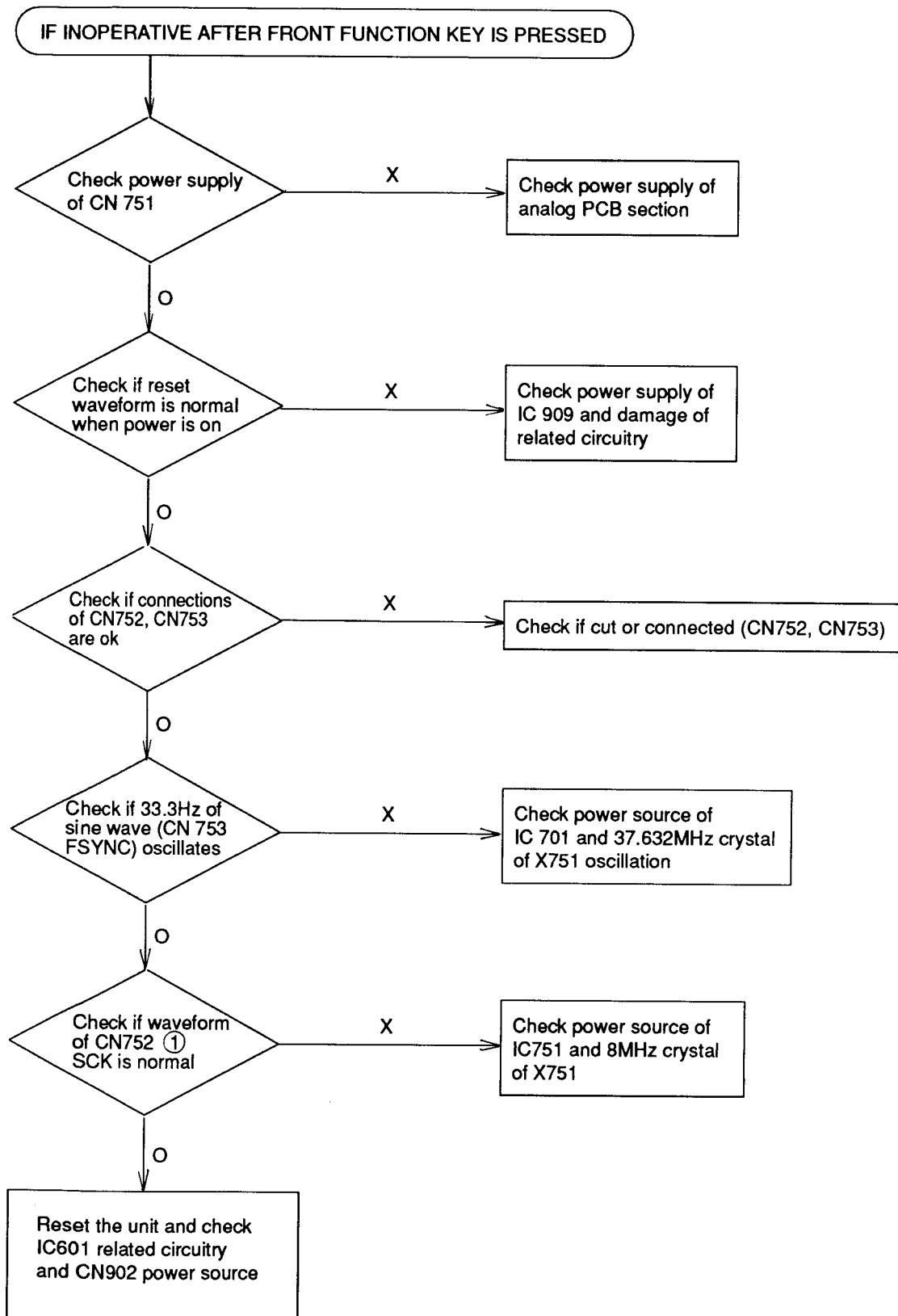
1	10.0
2	0.0
3	6.5

9. TROUBLE SHOOTING

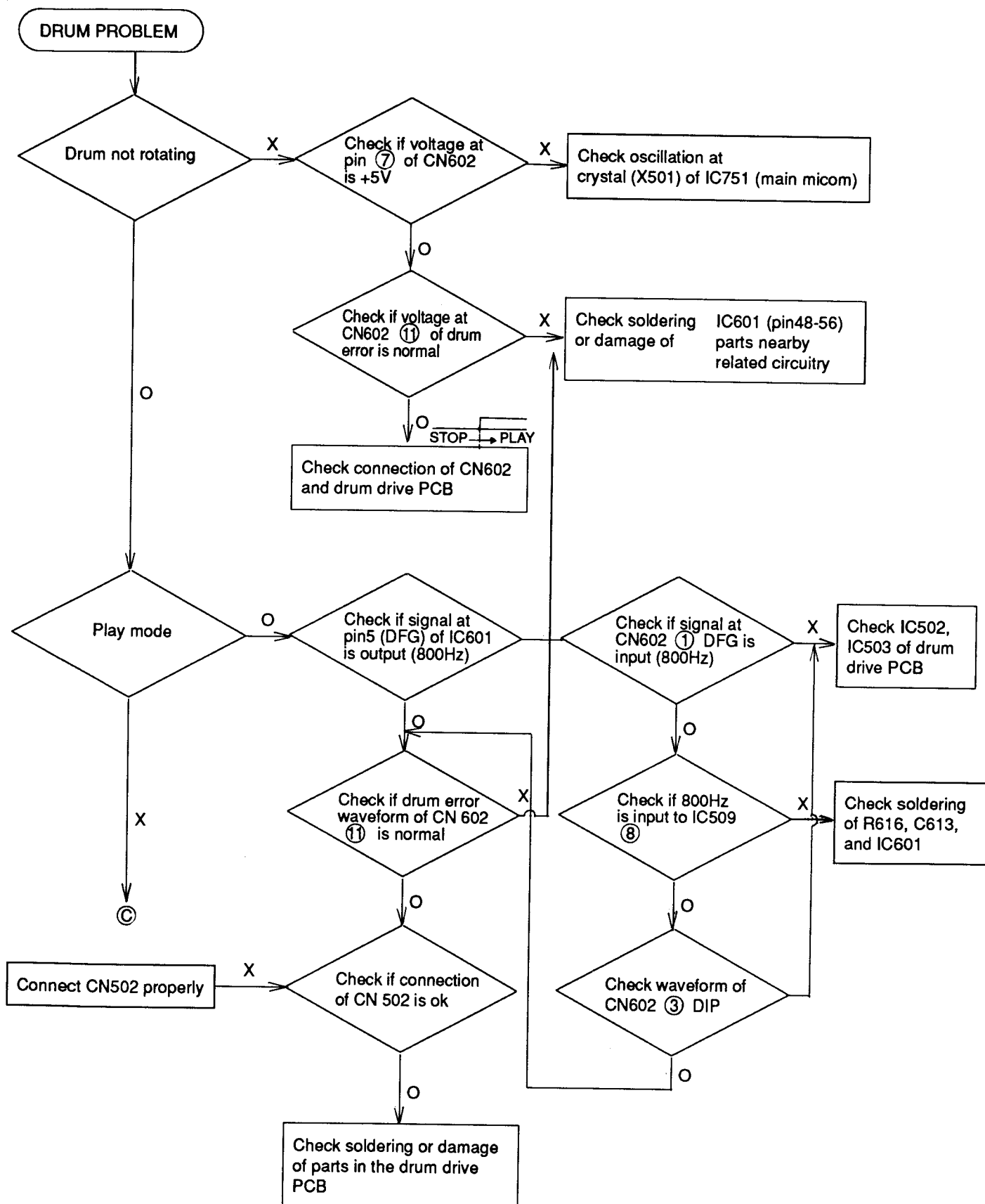
When	Check	Corrective action
Tape does not operate when control button is pressed	● Within 4 sec after power is ON, player does not work.	* Operates 4 sec after power on.
Set does not operate when tape control is pressed.	● No button except STOP button works during START ID writing (9 sec)	* Operate when writing of START ID is over
Cassette tray is opened again after being closed.	● Check the direction of cassette.	* Place the cassette as directed.
REC, START ID, SKIP ID and RENUMBER buttons do not work.	● Accidental erasure prevention tab is opened.	* Set accidental erasure prevention tab to recording position. (Refer to page 14)
Tape does not work.	● Check whether the set is in pause mode or not.	* Press PAUSE button (Clear Pause mode)
"CAUTION" is displayed during playback.	● Incorrect operation or REC button is pressed when REC is impossible.	* Press STOP button twice.
Running noise is heard during F.FWD or REW	● According to tape, noise can occur.	
No recording performed	● Accidental erasure prevention tab is opened.	* Set accidental erasure prevention tab to recording position. (Refer to page 14)
	● If COPY PROHIBIT is displayed and input select switch is placed to digital, recording from digital tape is impossible.	* Ensure input select switch corresponds to input terminal on reverse

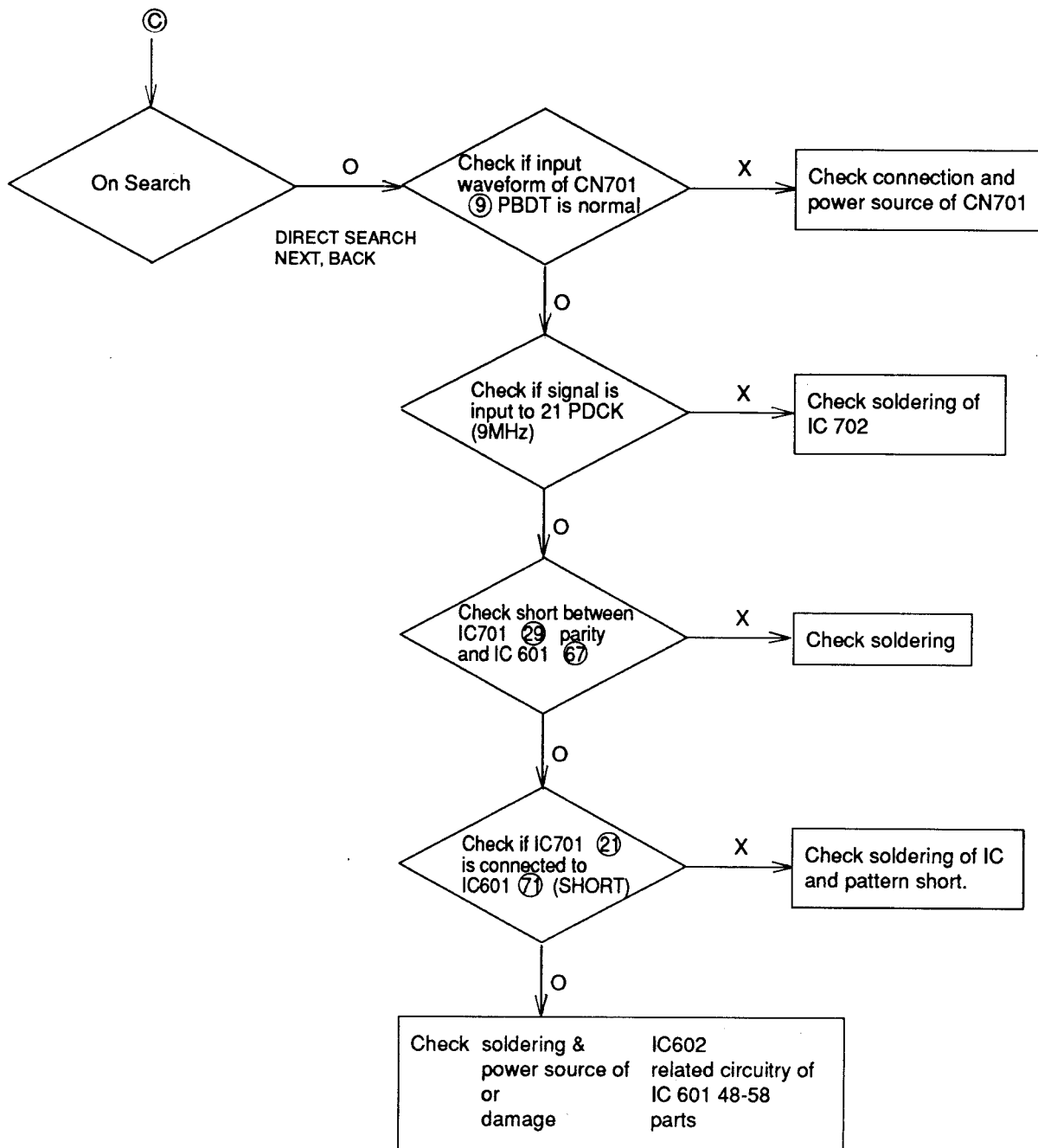
When	Check	Corrective action
No Recording in record mode.	● Check whether input select switch corresponds with input on reverse.	* Connect analog source with the analog input terminal.
	● Recording level is too low.	* Adjust REC LEVEL.
Neither recording nor playback works.	● Check connections.	
	● Wrong operation of connected amplifier.	* Operate amplifier correctly with reference to amplifier user's manual
Sound is unbalanced during recording.		* Adjust left and right recording levels correctly.
Suddenly SEARCH operation begins, during playback.	● SKIP ID is written.	* Erase unnecessary SKIP ID.
Search time is too long.	● Blank band exists between music. (In this case, BLANK is displays)	* Remove excessive blank.
START ID is not written during recording.	● Within 4 sec of writing of START ID, START ID can not be written.	* To write START ID within 4 sec of writing of START ID, use MAN button.
SEARCH does not work with START ID.	● No START ID.	* Write START ID.
	● If START ID is written manually when the length of music is short, START ID is written to both music serially.	* If the length of music is short, do not use MANUAL button to write START ID.
	● If PROGRAM NO is not written, search using NEM button does not work.	* Write PROGRAM NO using RENUMBERING or other method.

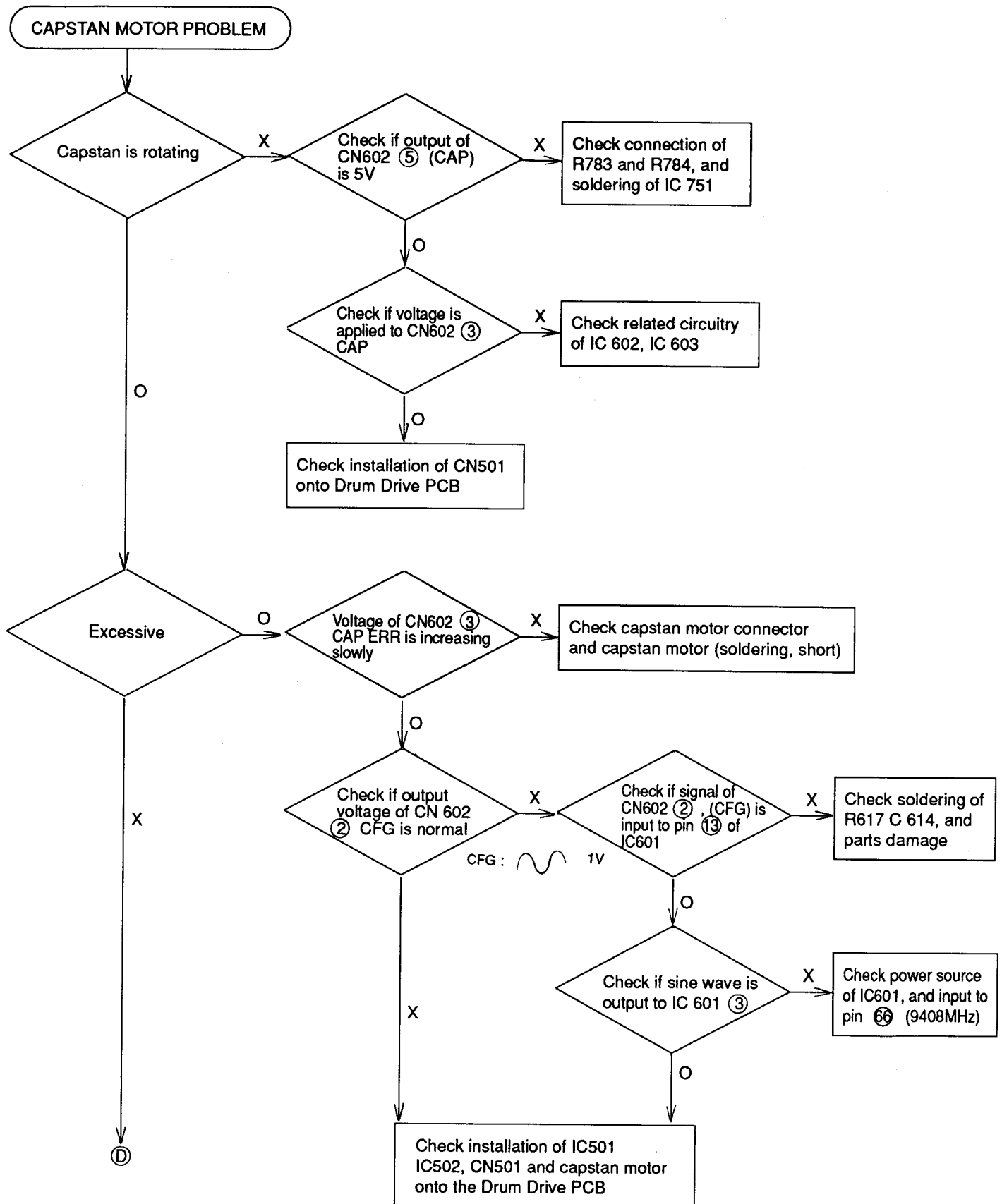


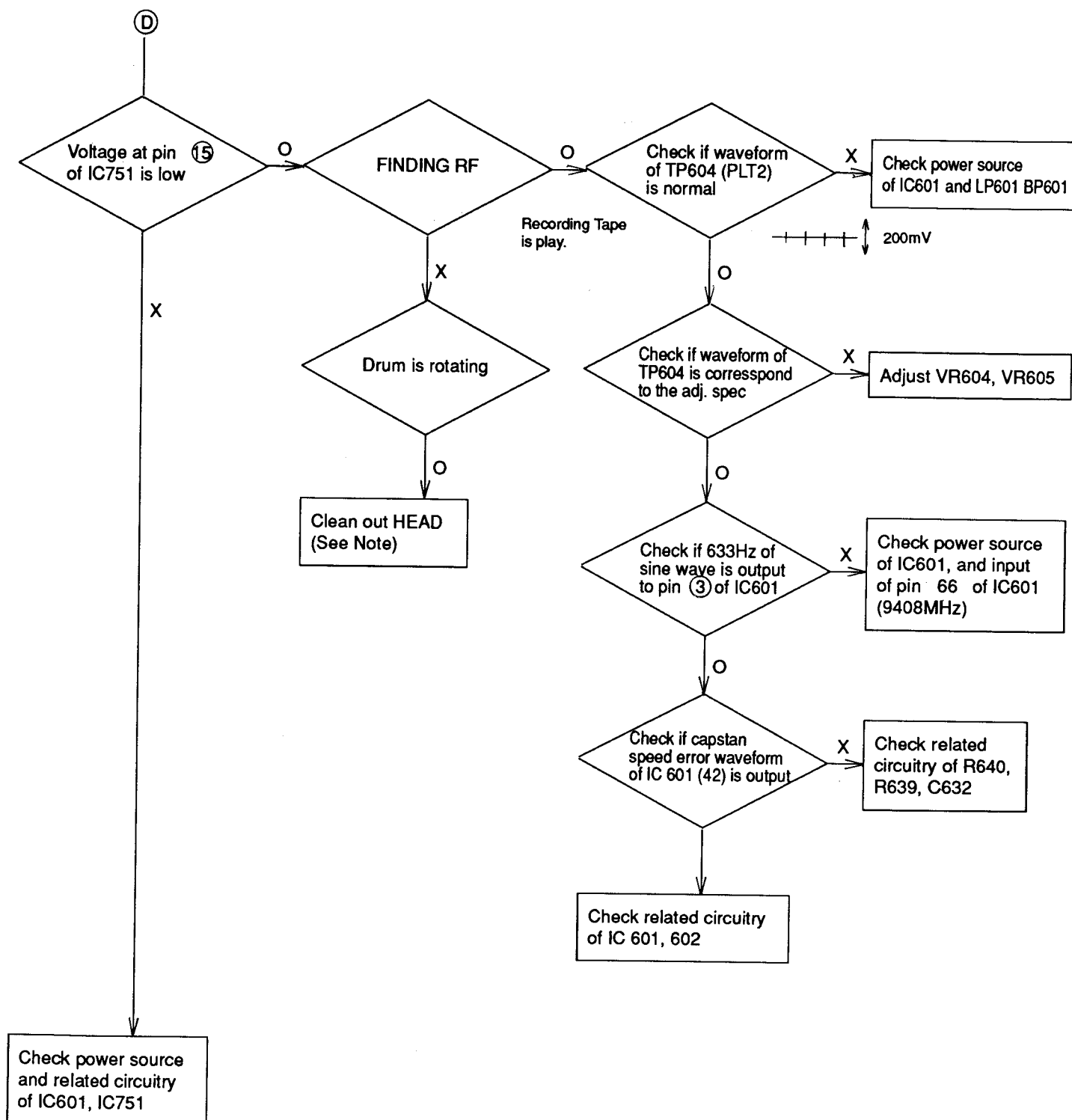


Be careful of static electricity in disassembling the front ASS'Y.

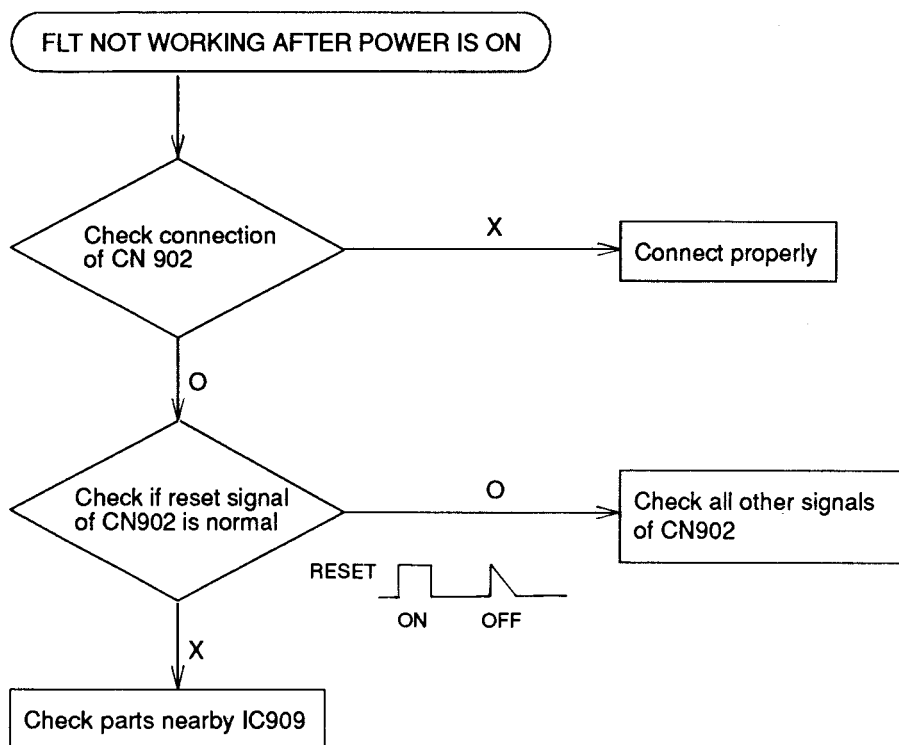




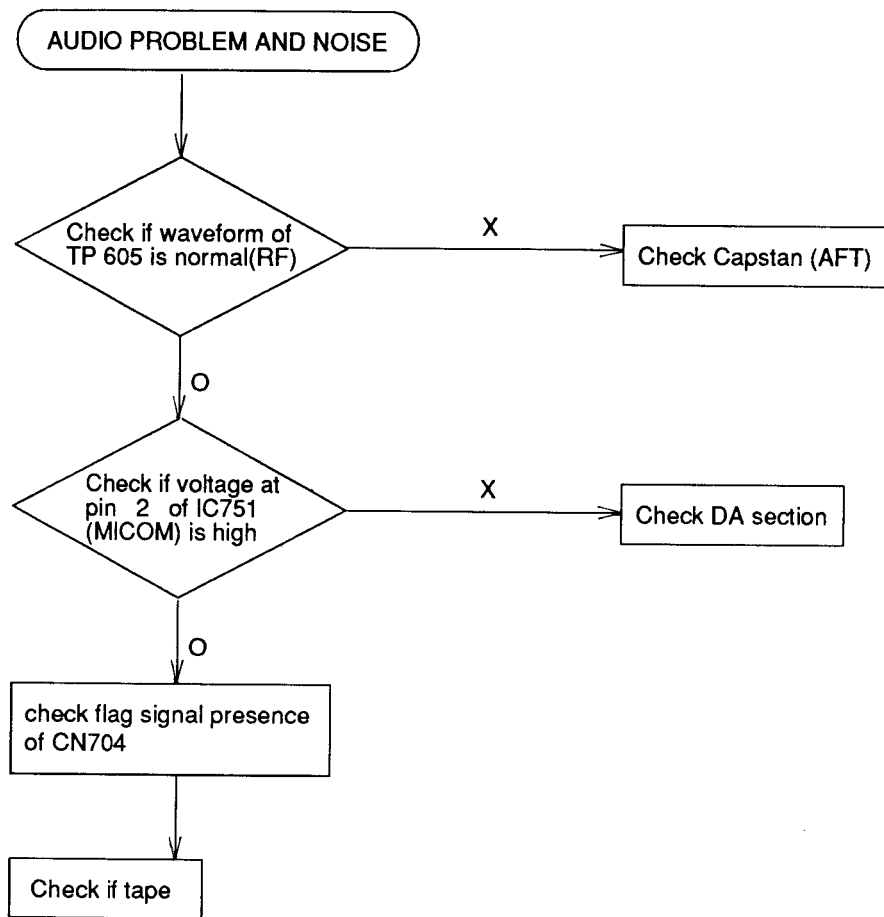


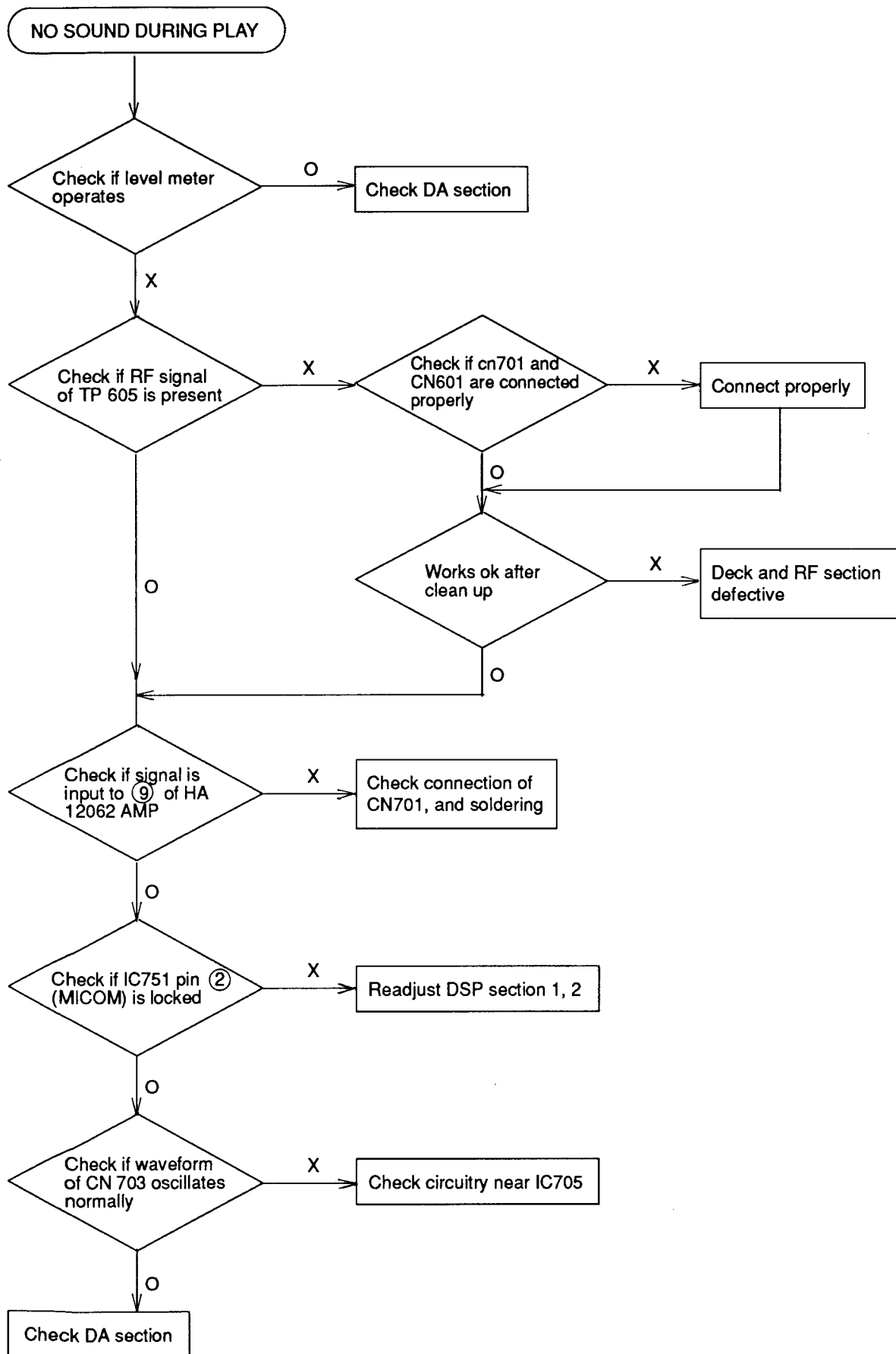


<RESET>

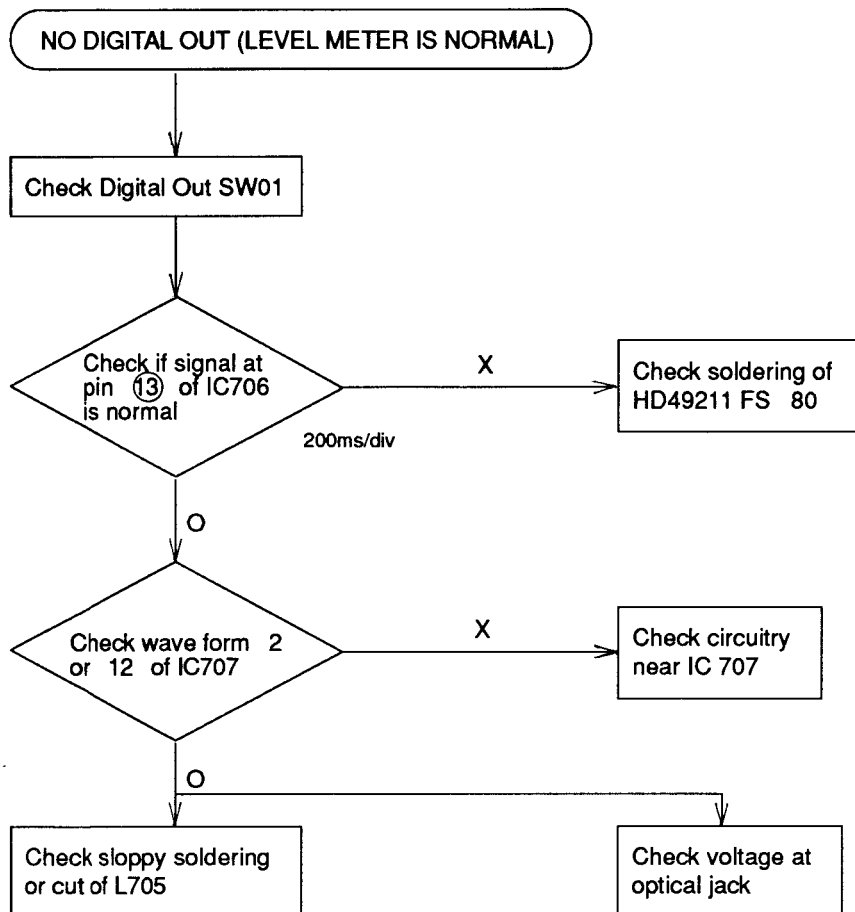


<PLL>

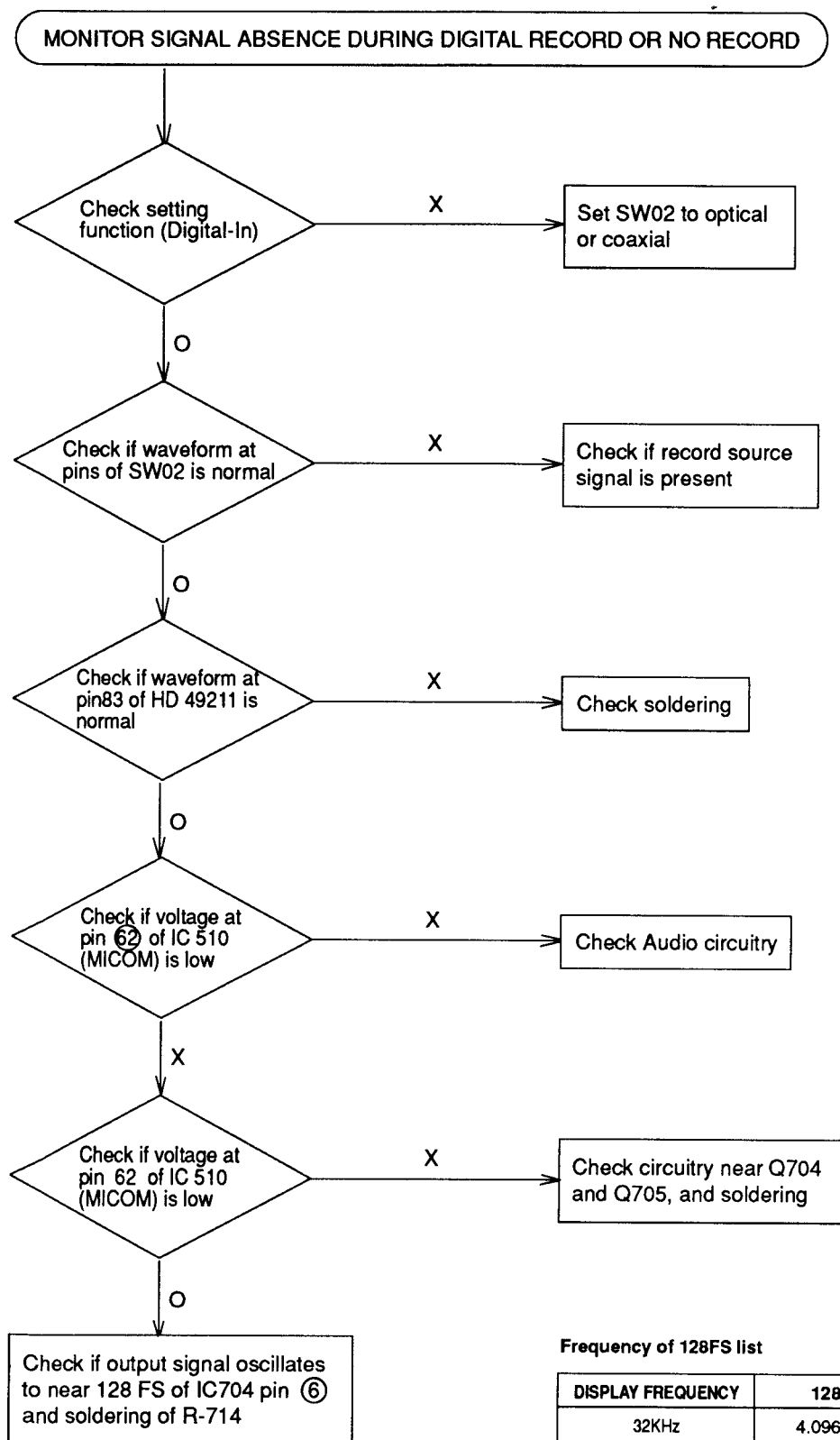




<DIGITAL OUT>



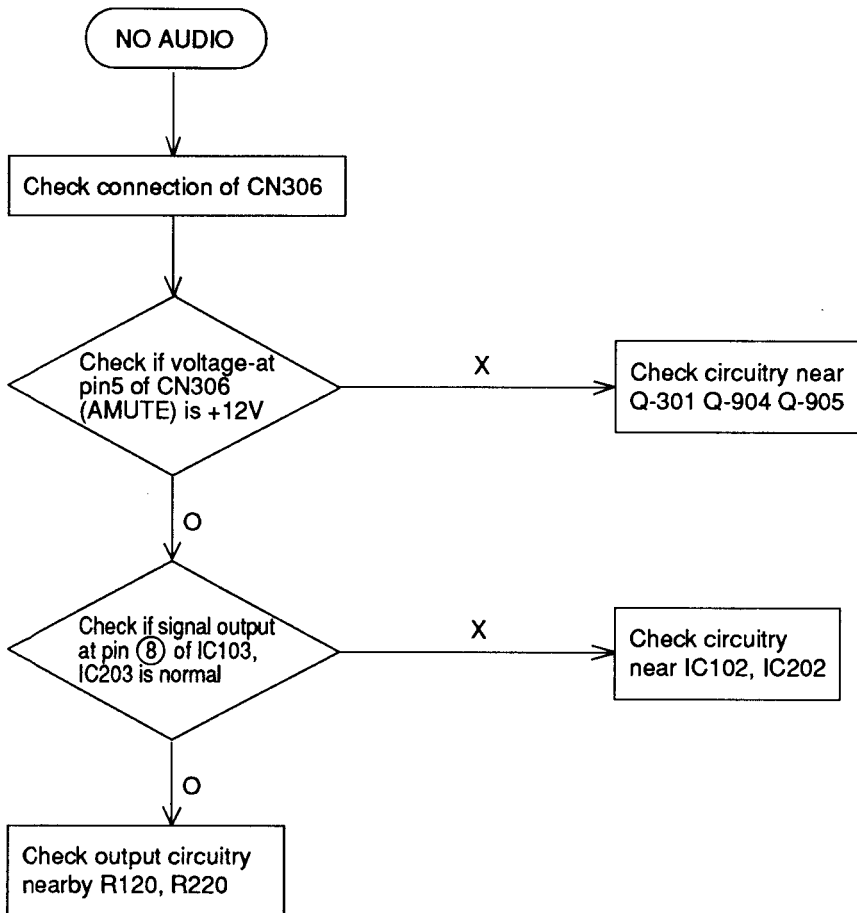
<DIGITAL IN>



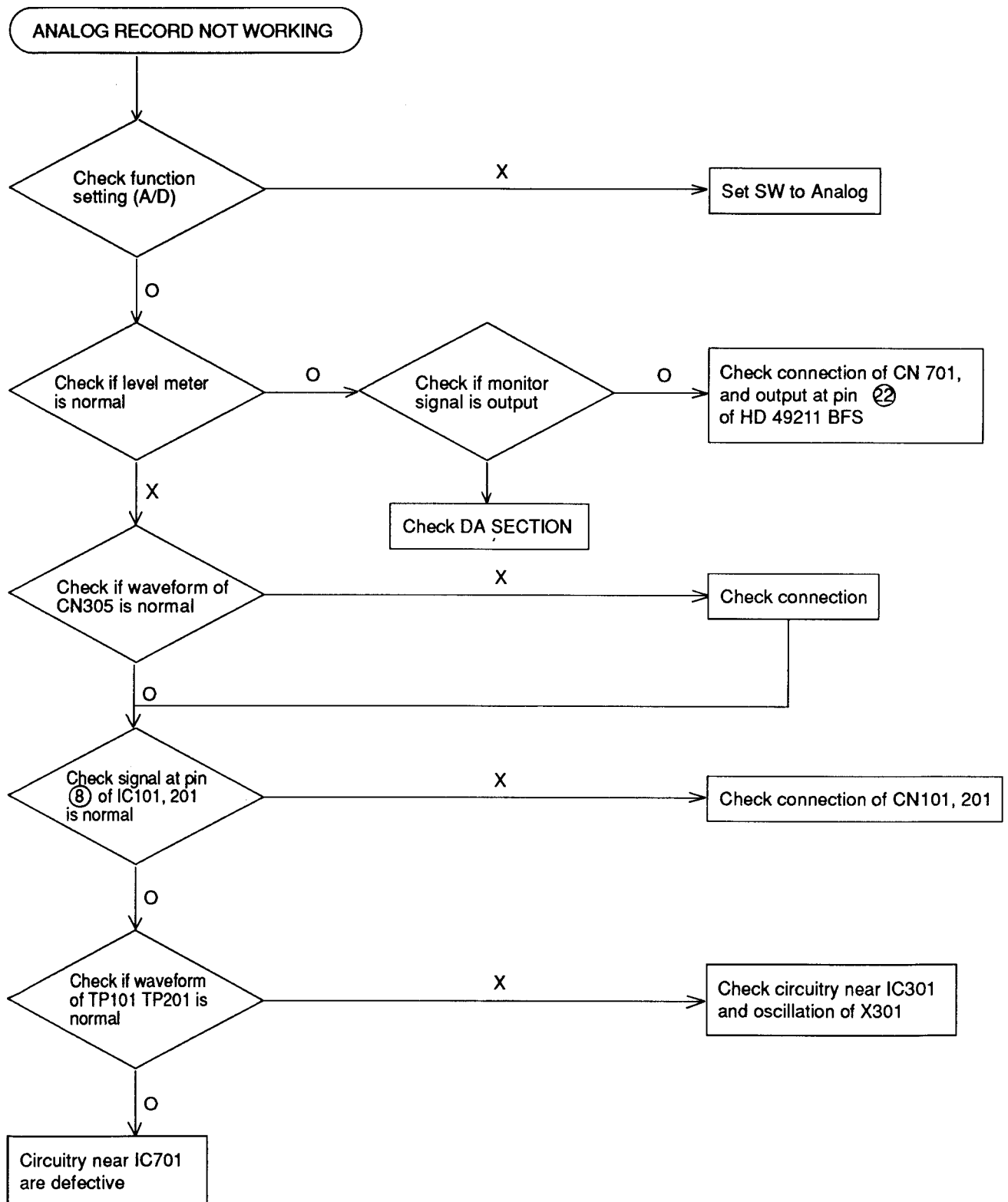
Frequency of 128FS list

DISPLAY FREQUENCY	128FS
32KHz	4.096MHz
44.1KHz	5.644MHz
48KHz	6.104MHz

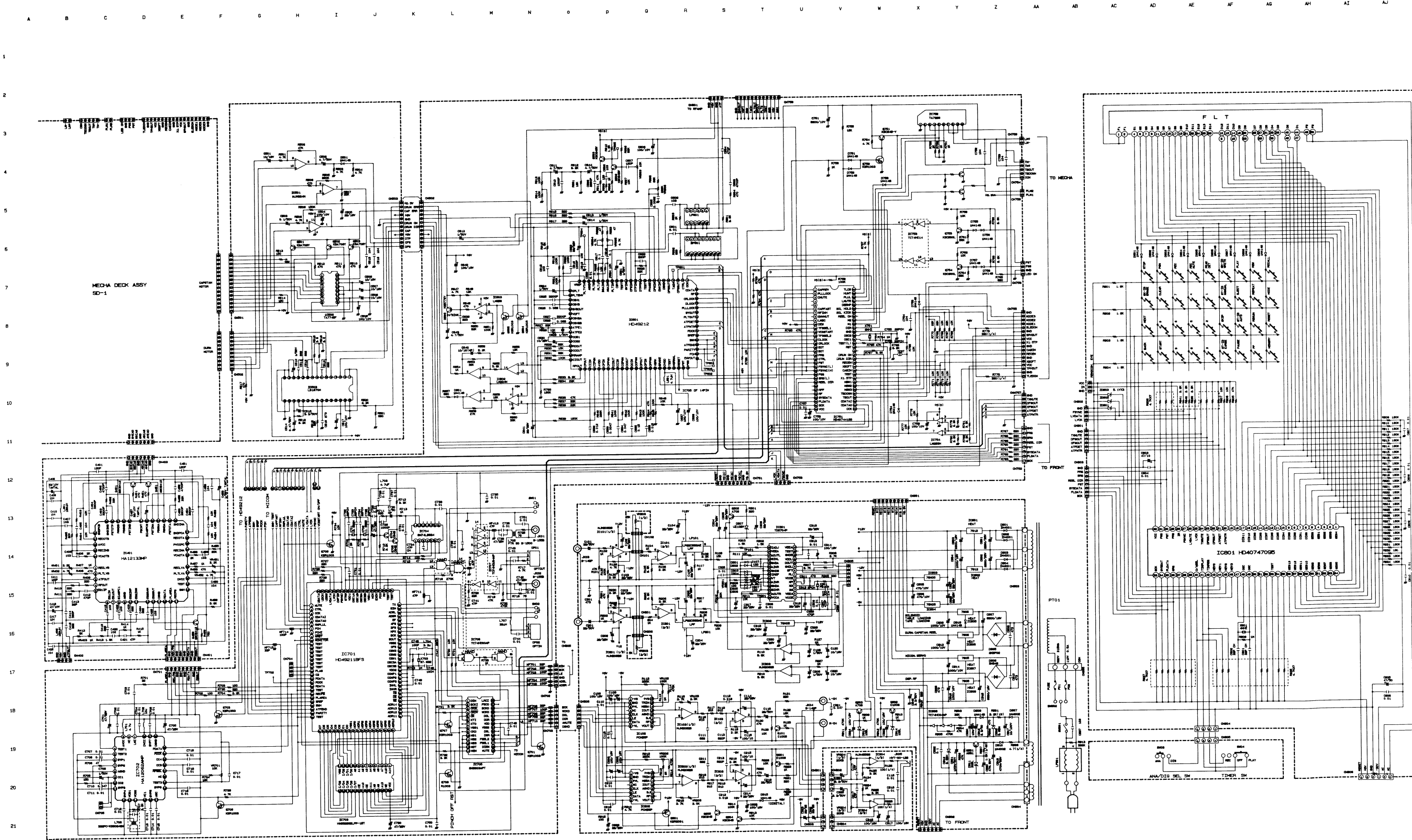
<DA>



<AD>

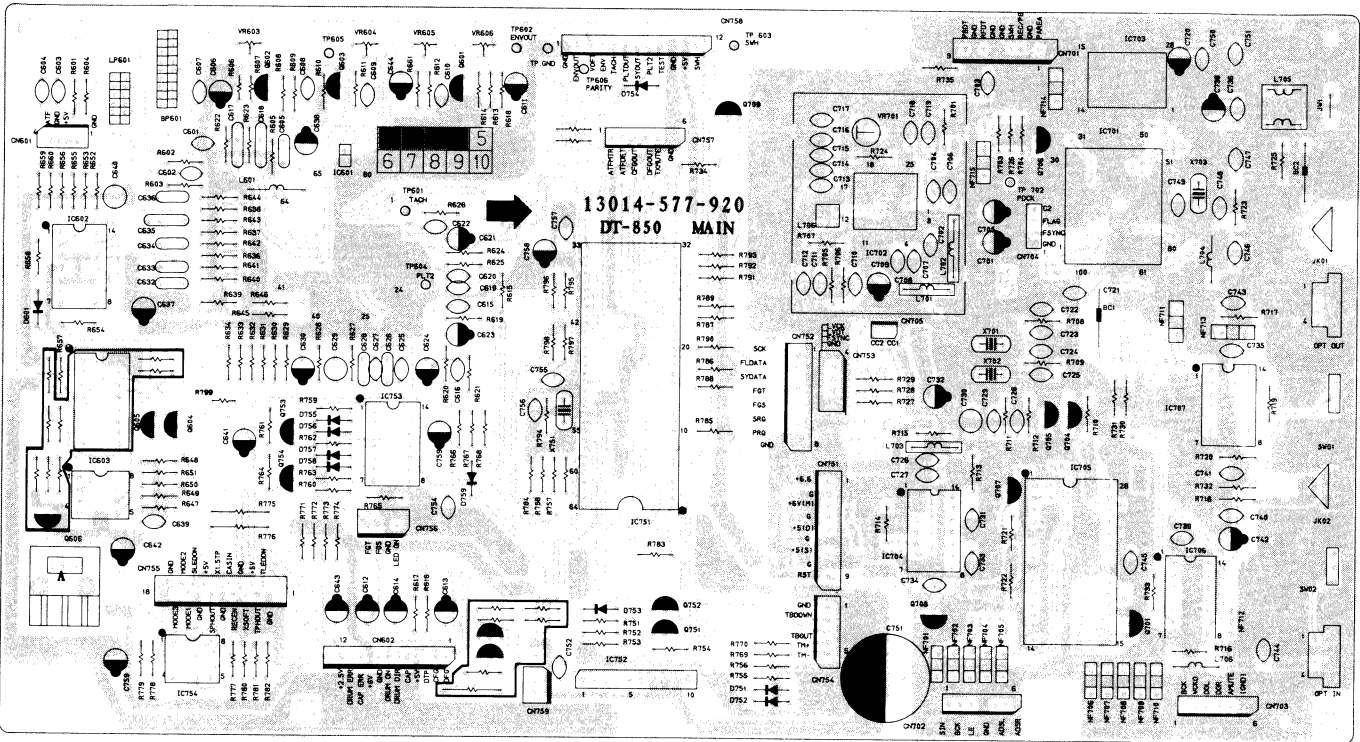


10. SCHEMATIC DIAGRAM

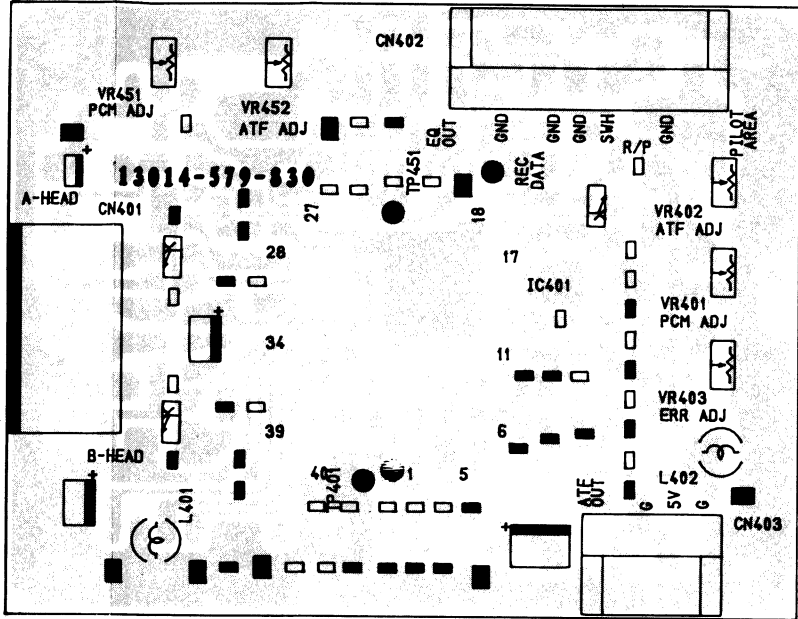


11. PATTERN DIAGRAM

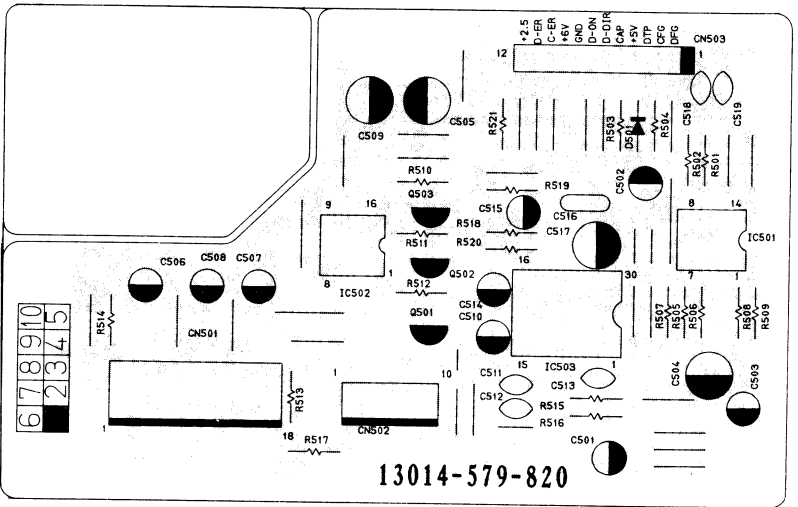
MAIN (TOP)



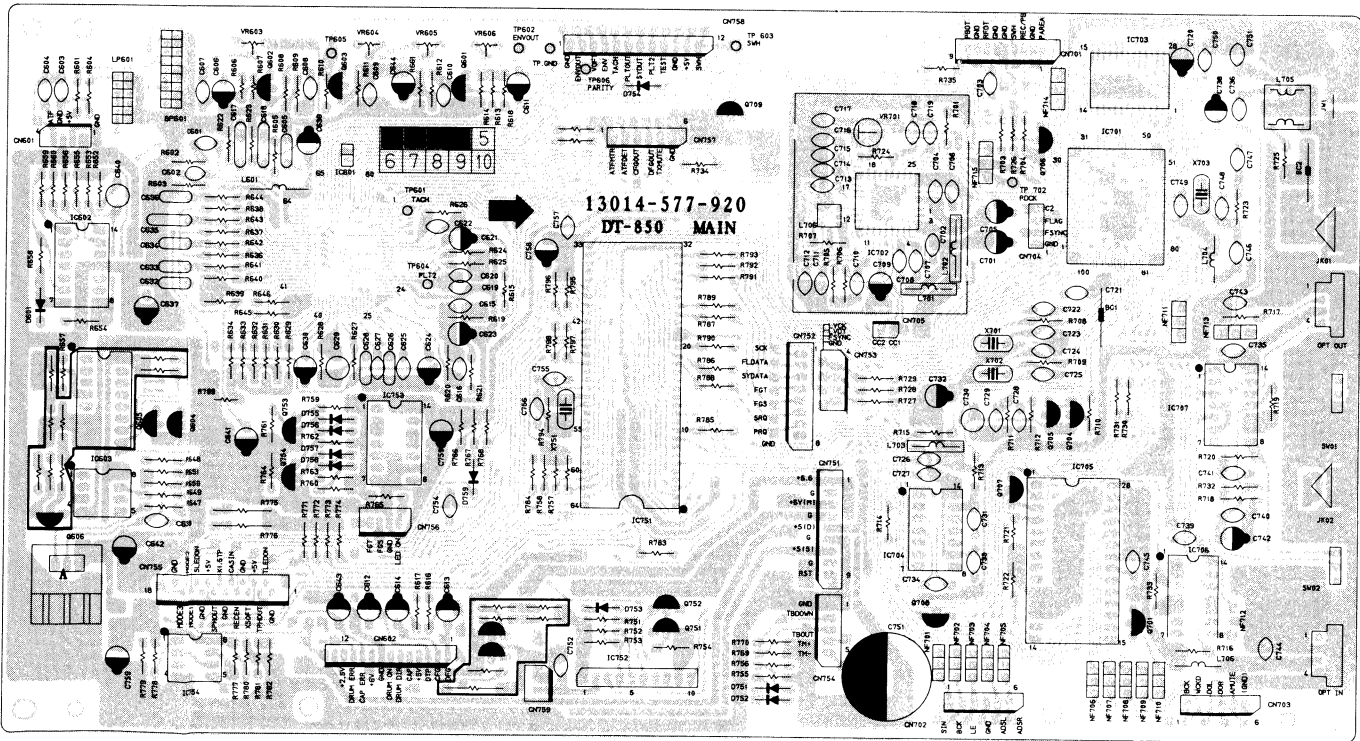
RF (TOP)



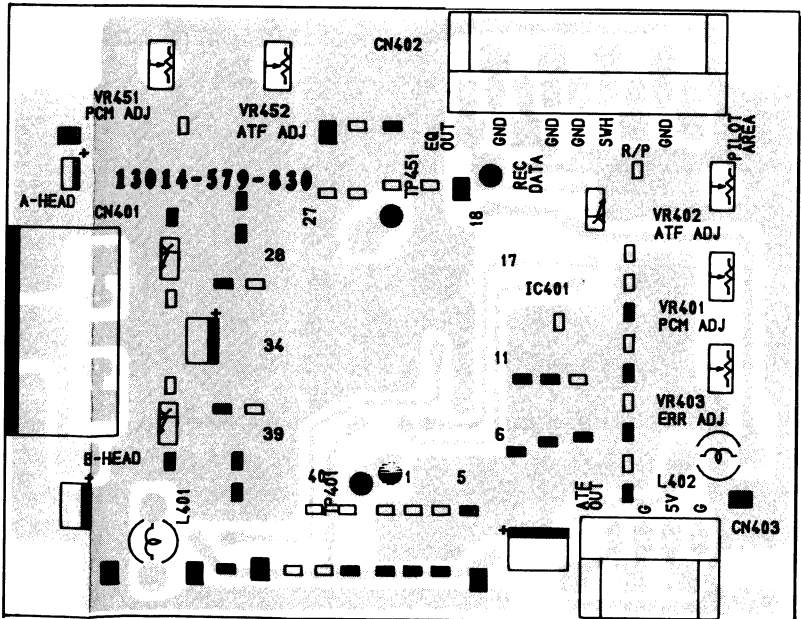
DRUM



MAIN (BOTTOM)

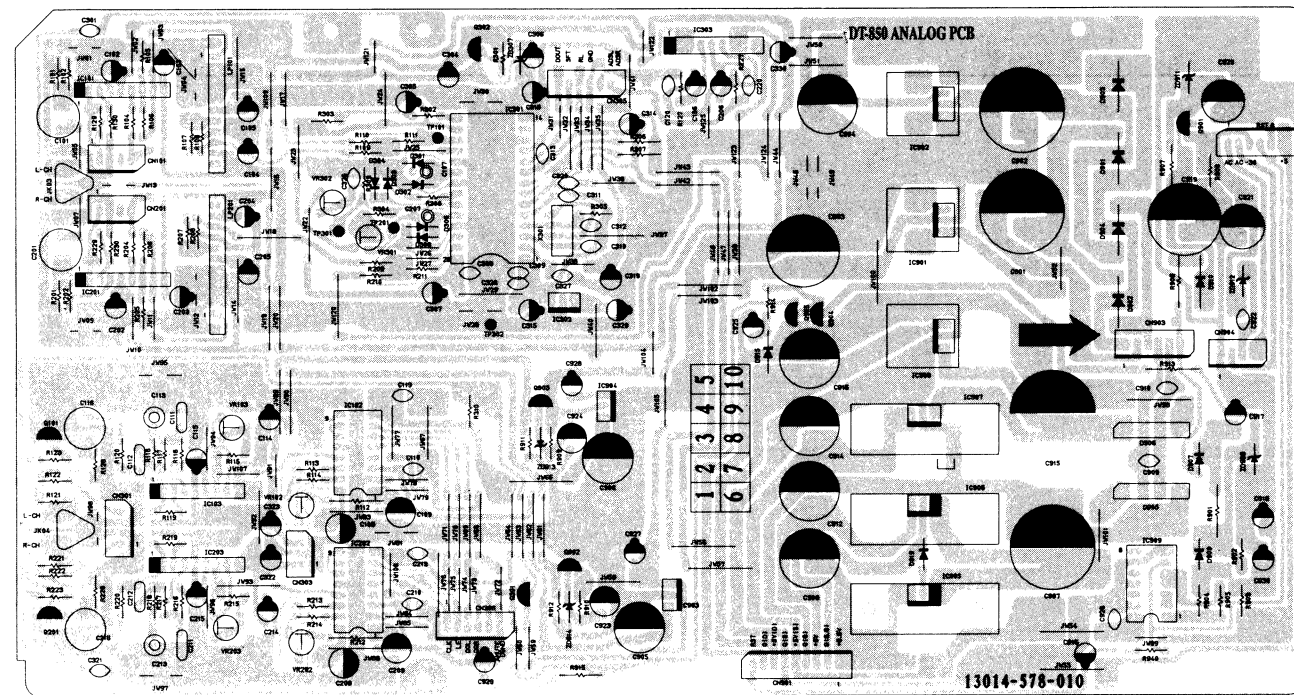


RF (BOTTOM)

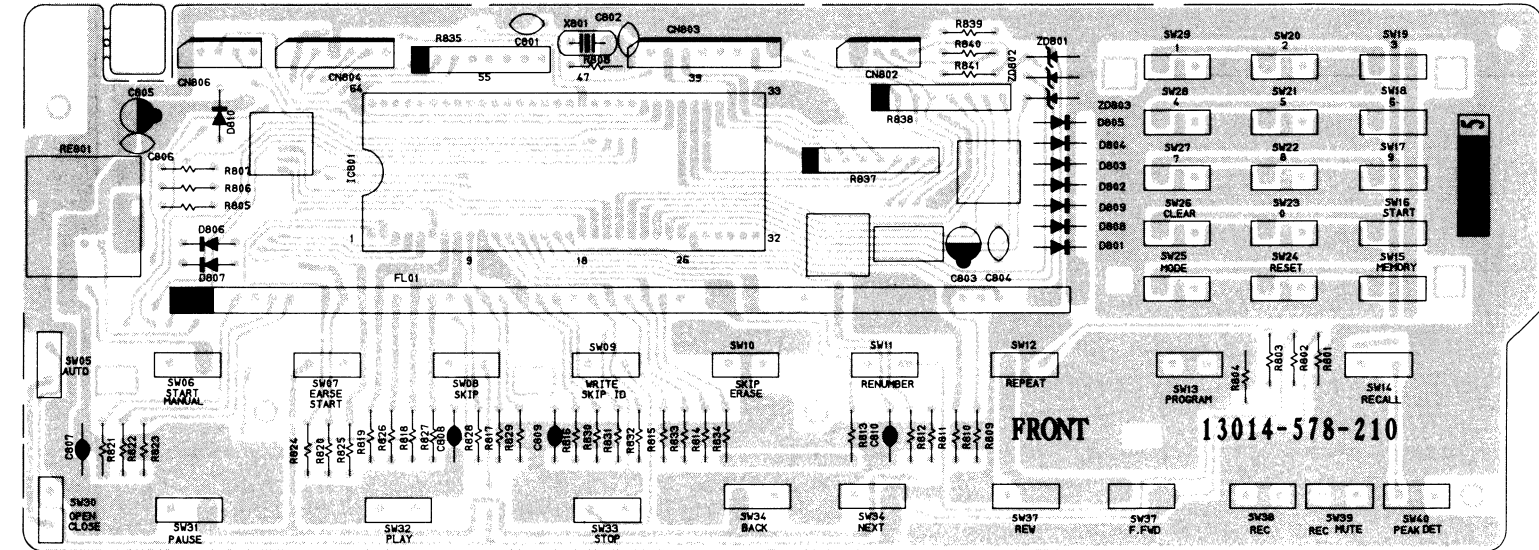


● PATTERN DIAGRAM

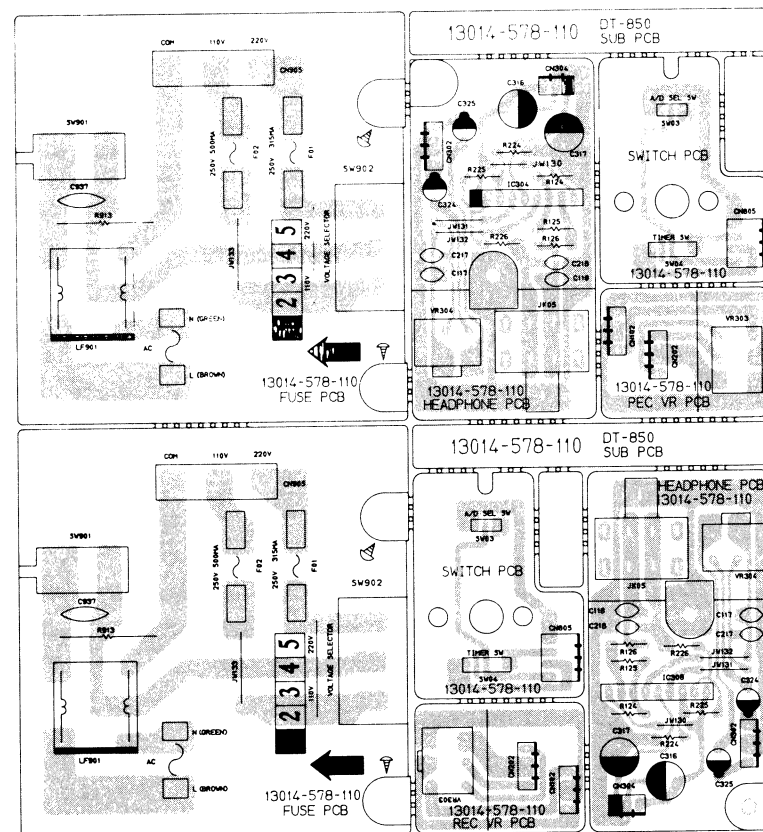
ANALOG



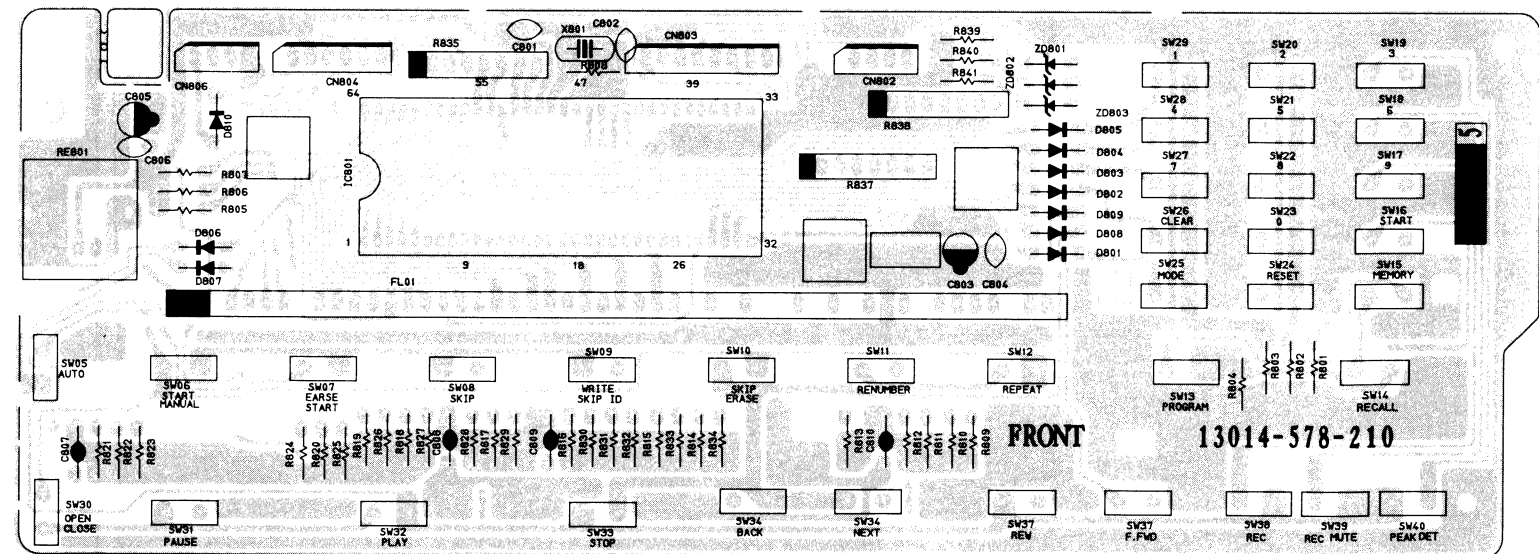
FRONT (TOP)



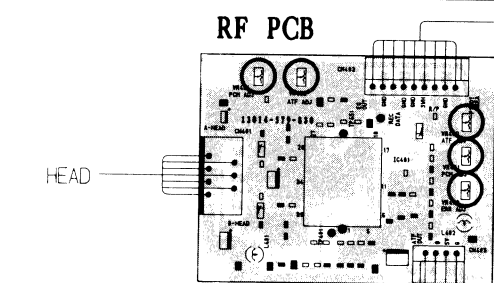
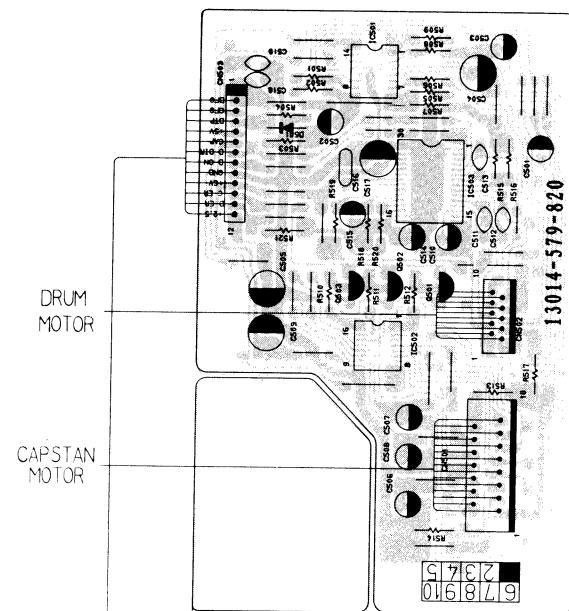
SUB



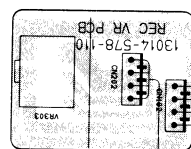
FRONT (BOTTOM)



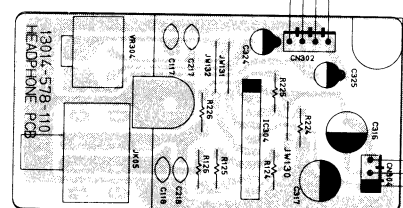
● WIRING DIAGRAM DRUM PCB



REC/V PCB

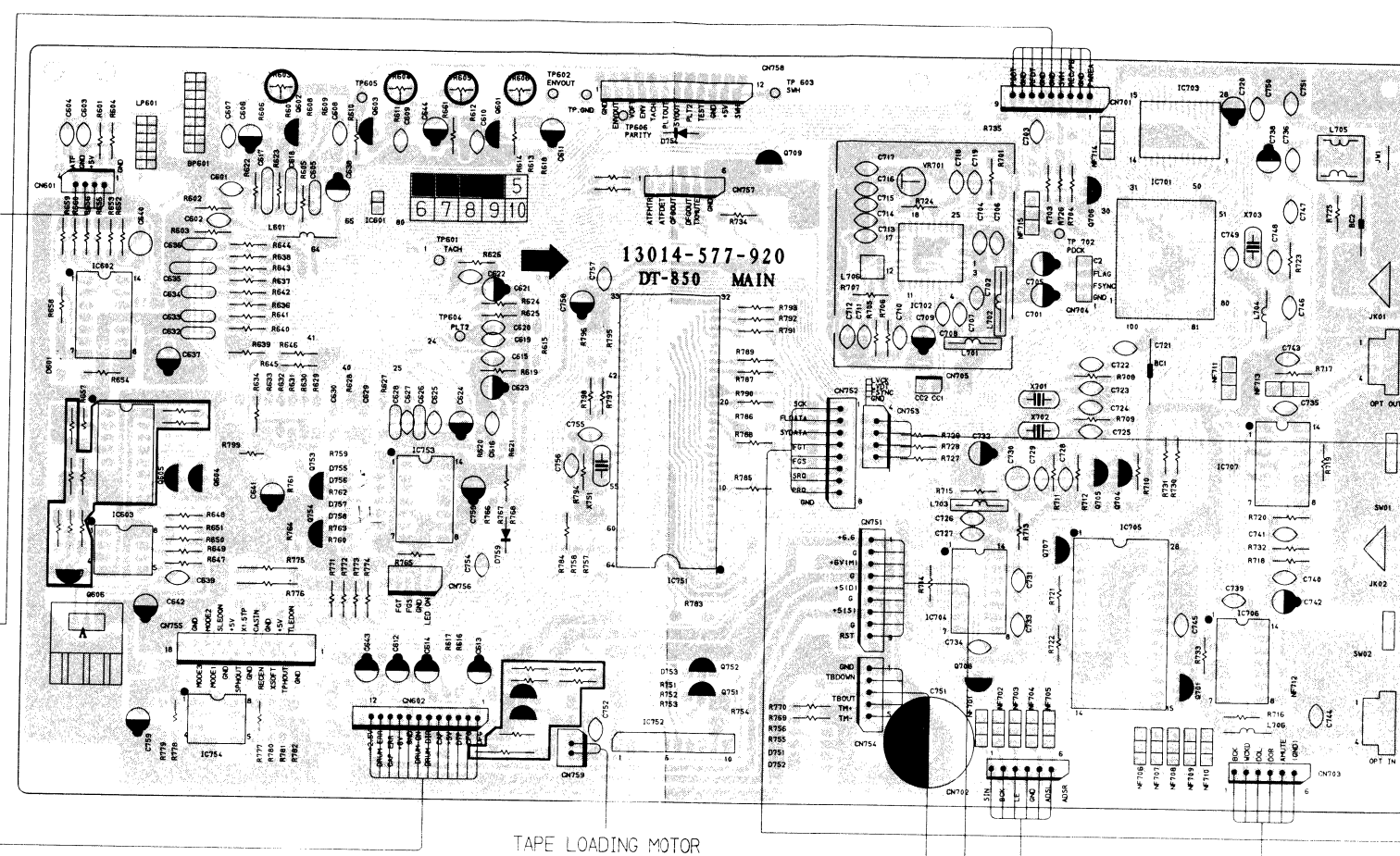


H/P PCB

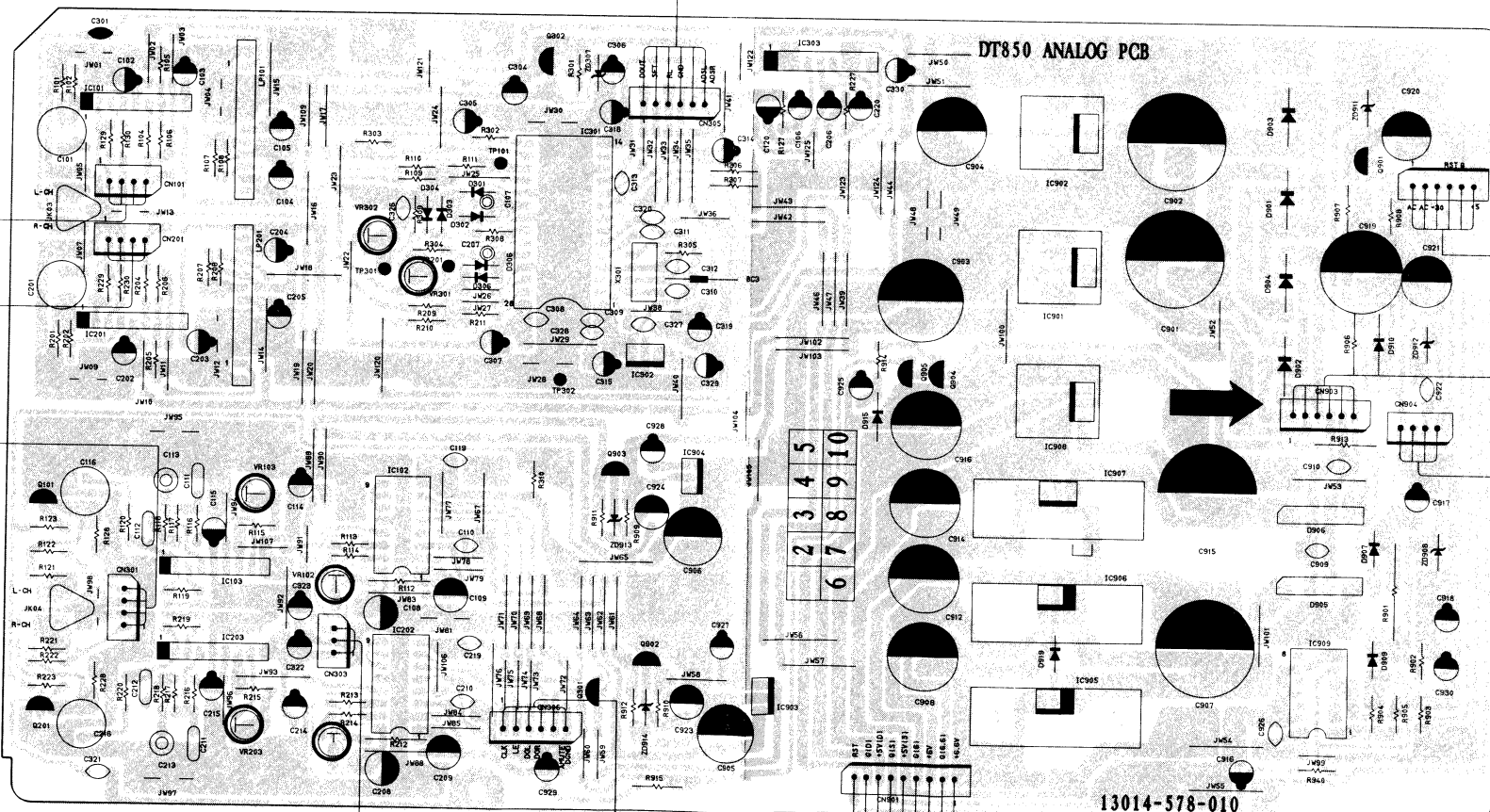


○ ADJUSTMENT

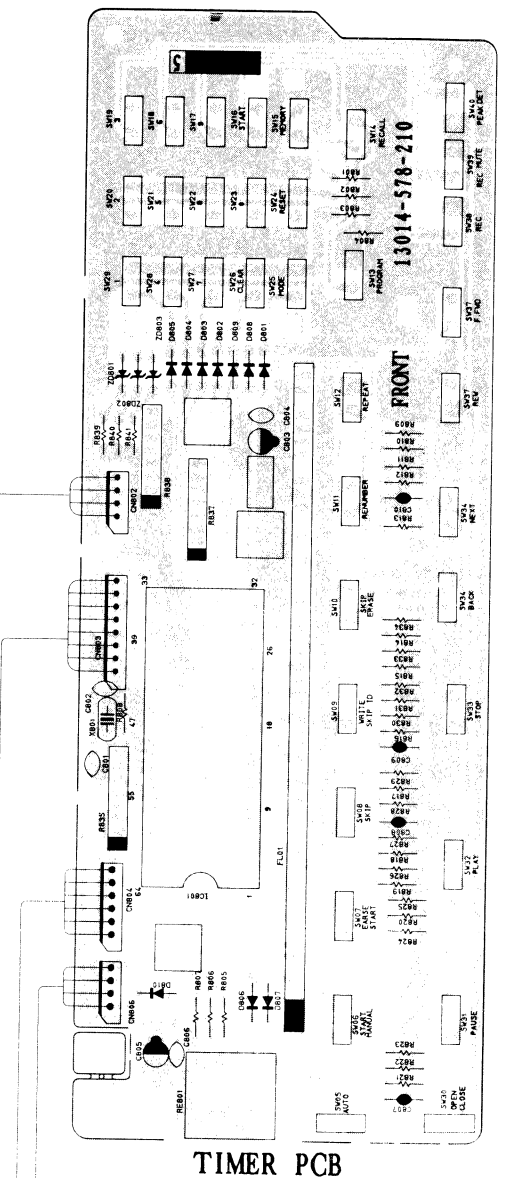
MAIN PCB



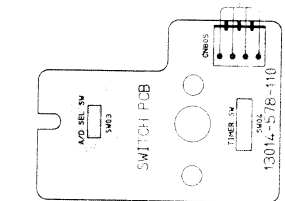
ANALOG PCB



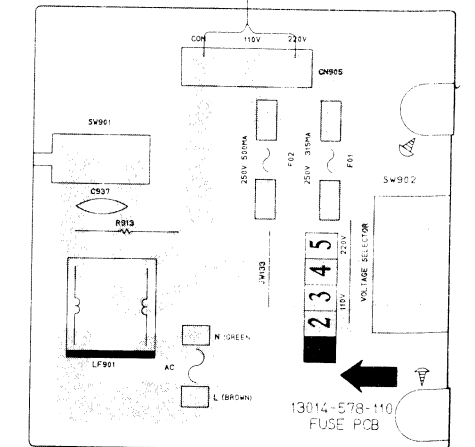
FRONT PCB



TIMER PCB



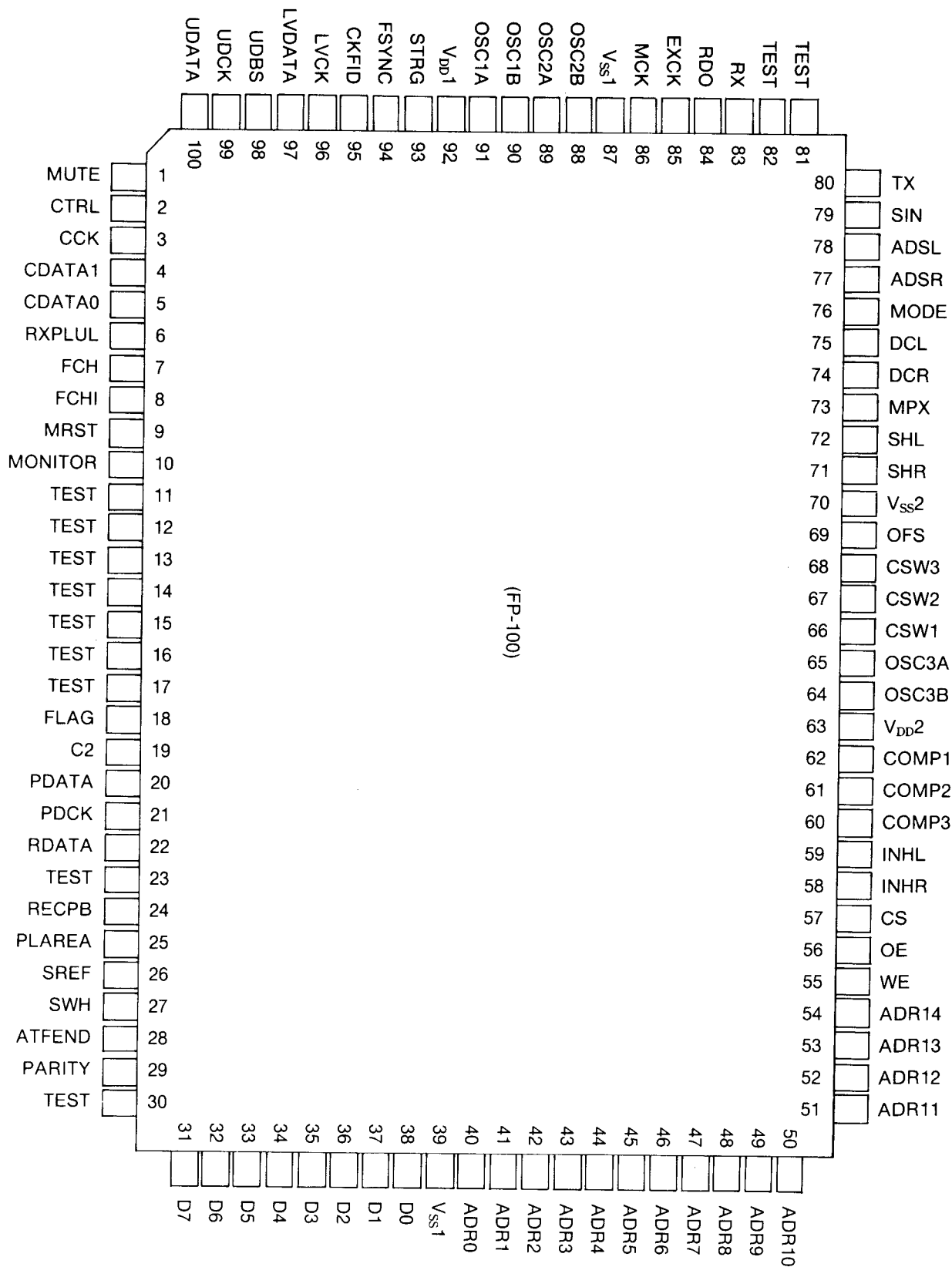
POWER TRANS



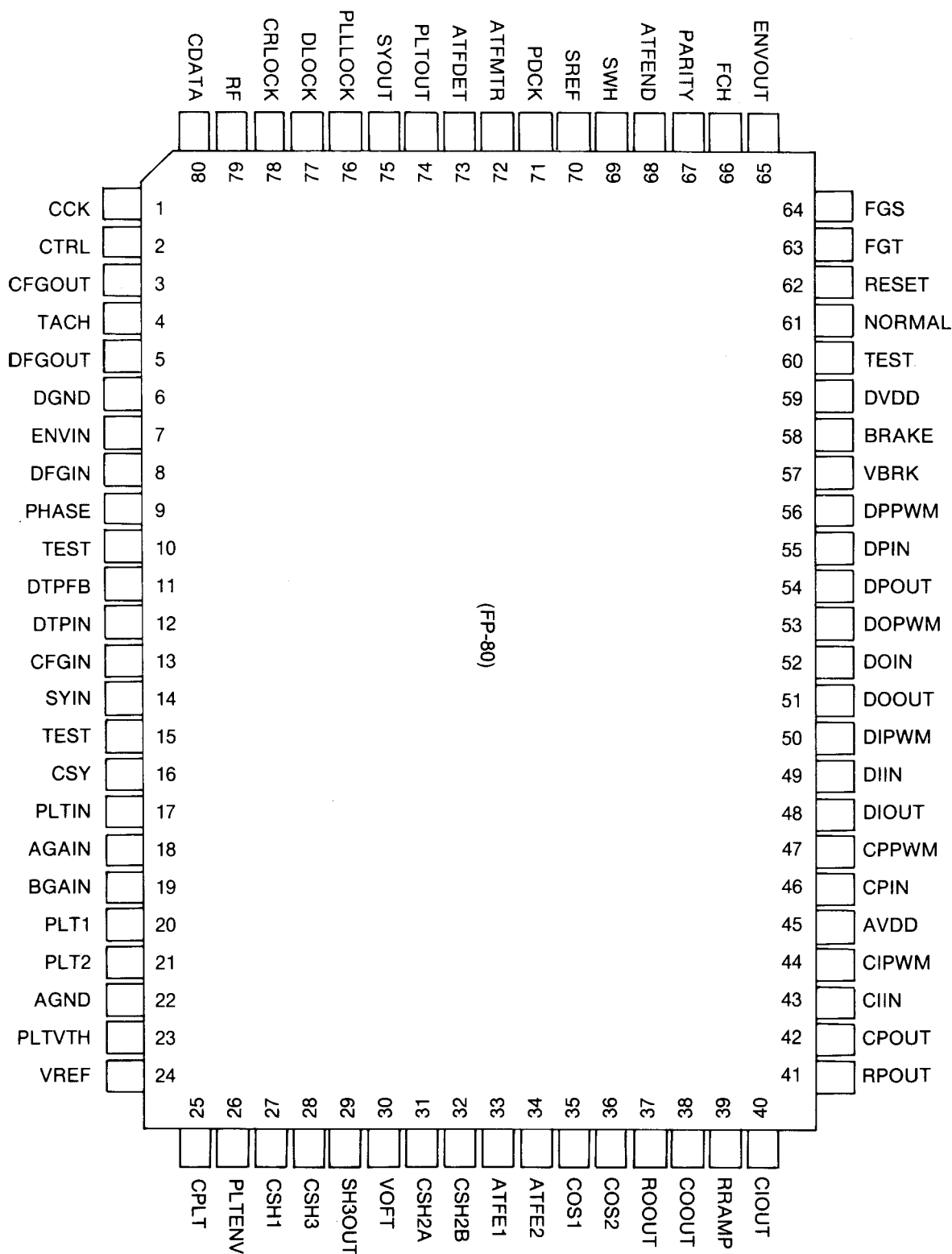
FUSE PCB

12. IC EXTERNAL & INTERNAL DIAGRAM

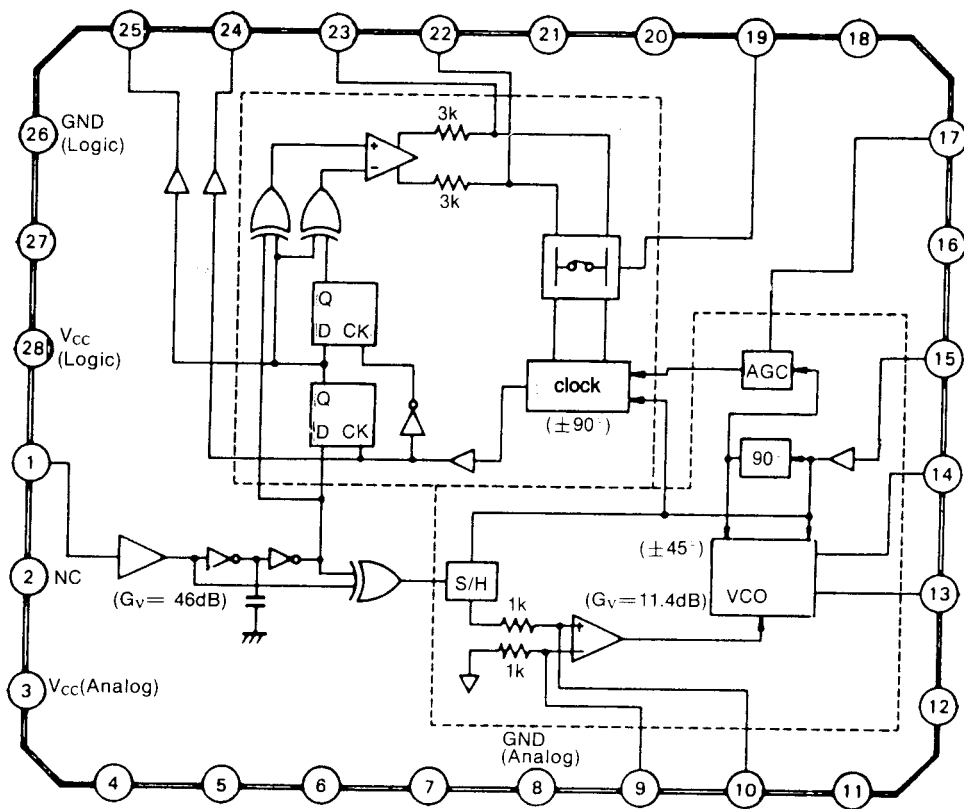
(1) HD49211 BFS (DSP, IC701)



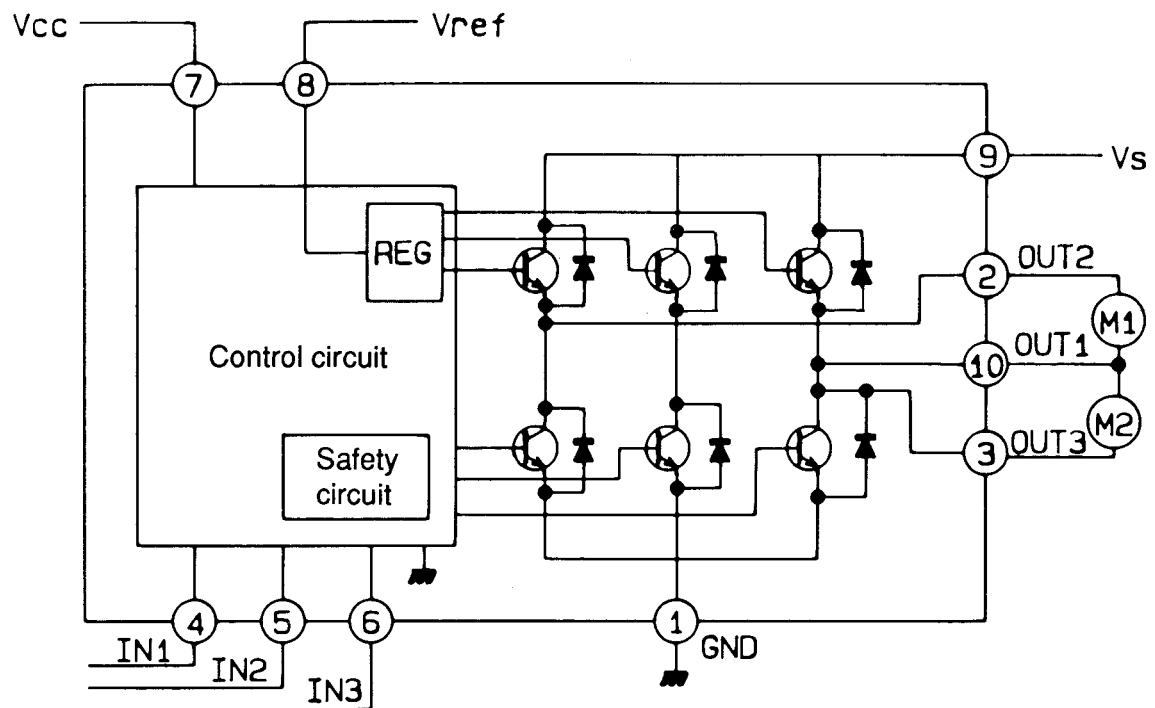
(2) HD49212 (SERVO, IC601)



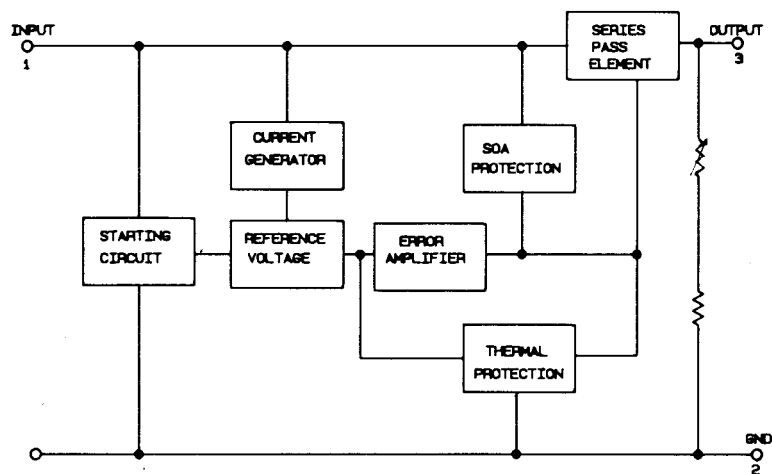
(3) HA12062AMP (DATA STROBE, WIC702)



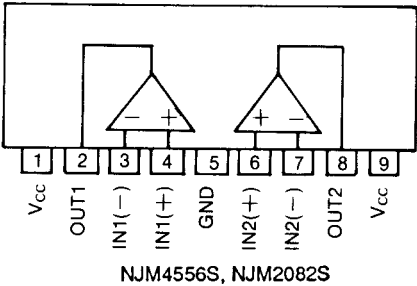
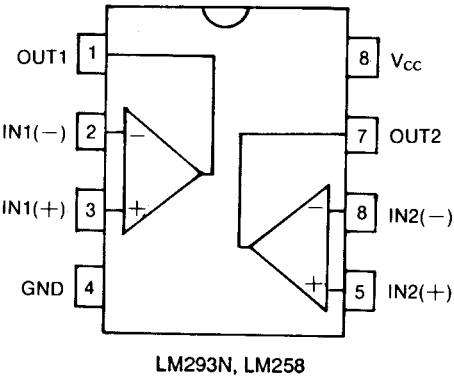
(4) TA7288P (MOTOR DRIVER, IC752)



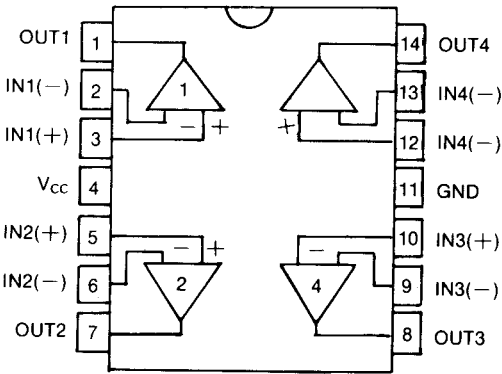
(5) MC78XX (REGULATOR, RIC901, RIC302, 907, 908, 903, 905, 906)



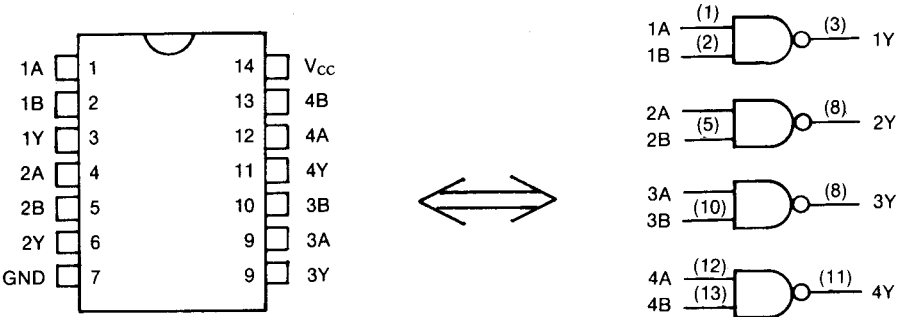
- (6) LM258 (OP AMP, IC603) LM293N (COMPARATOR, IC754) NJM4556S (OP AMP, RIC304)
 NJM2082S (OP AMP, XIC101, 103, 201, 203, 303)



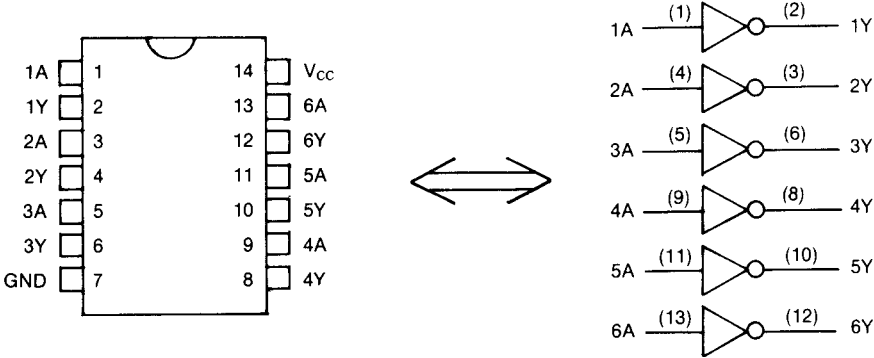
- (7) LM224 (OP AMP, IC602)



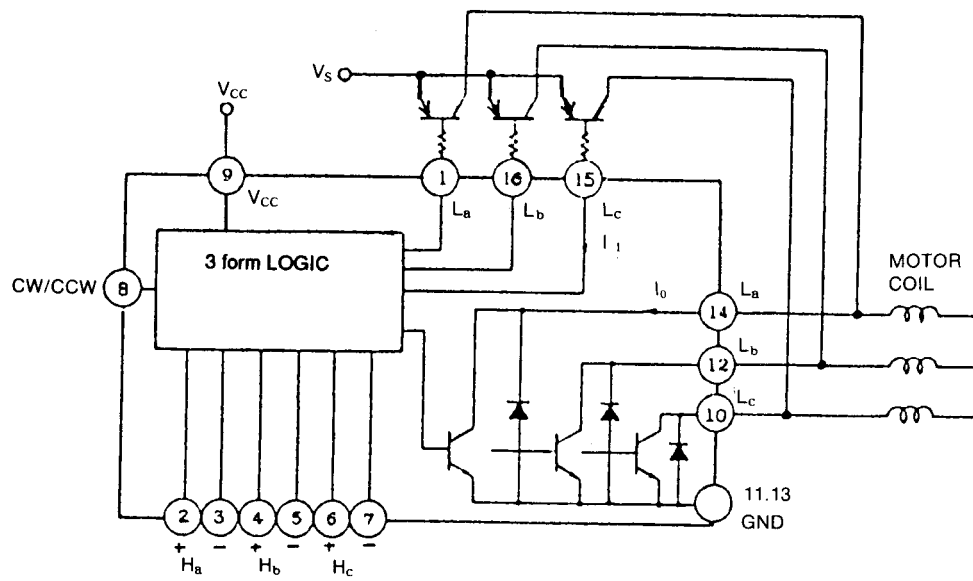
(8) TC74HC00AP (NAND, IC706)



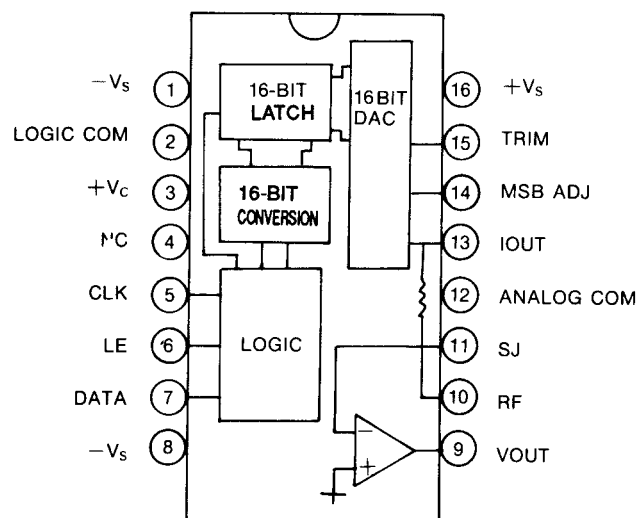
(9) TC74HC04AP (INVERTER, RIC909)

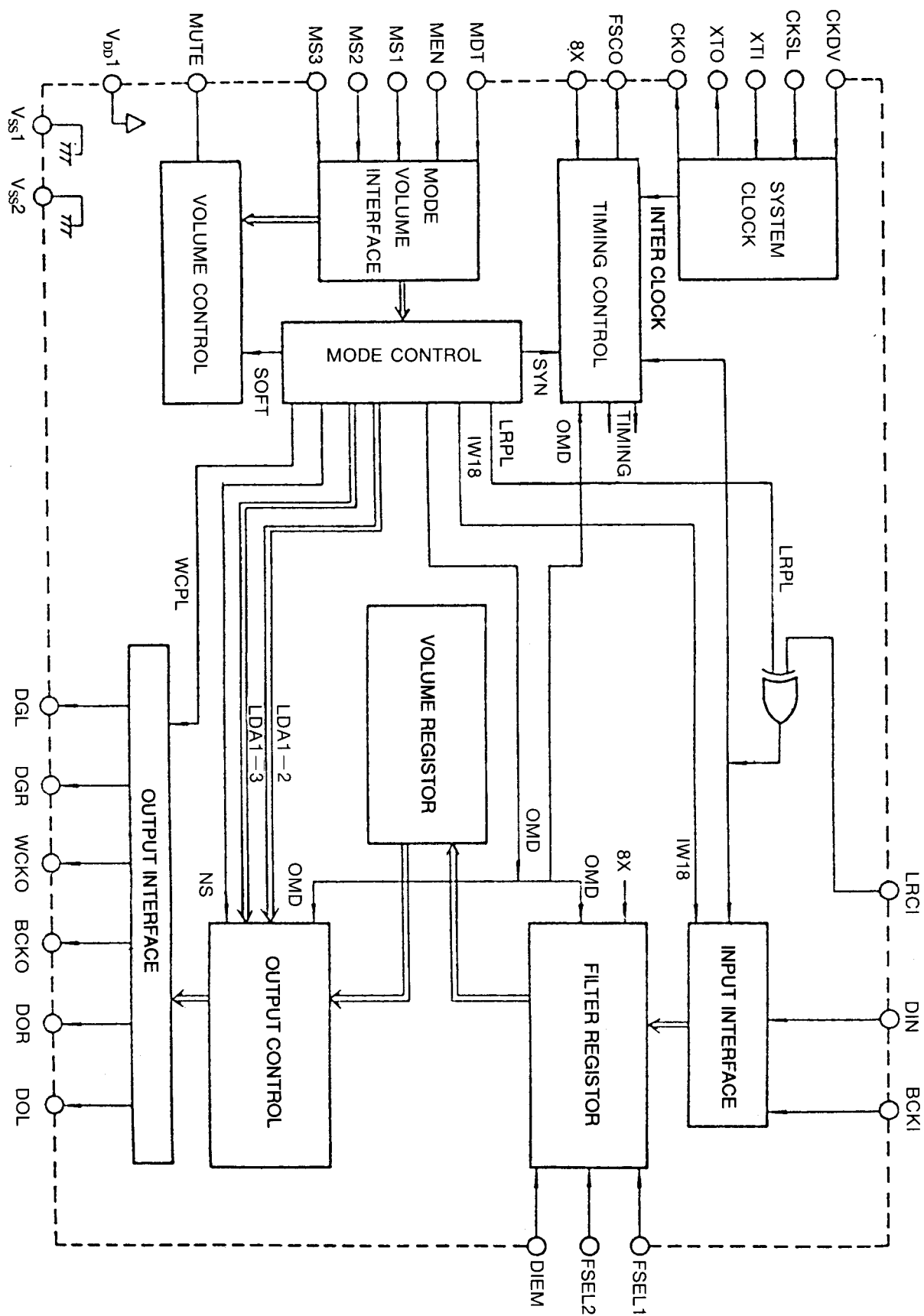


(10) TA7745F (MOTOR DRIVER, IC502)

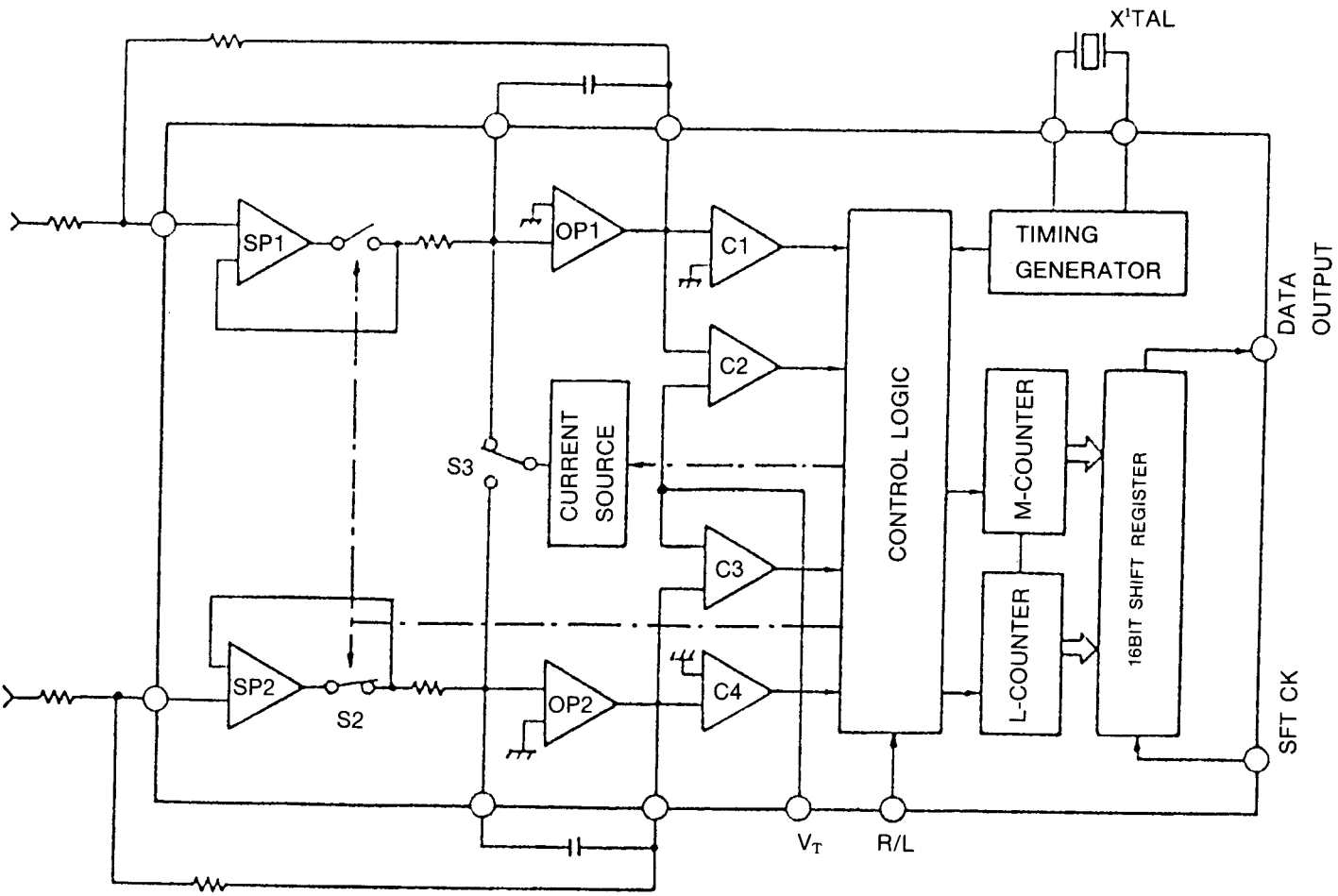


(11) PCM56P (D/A CONVERTOR, XIC102, 202)

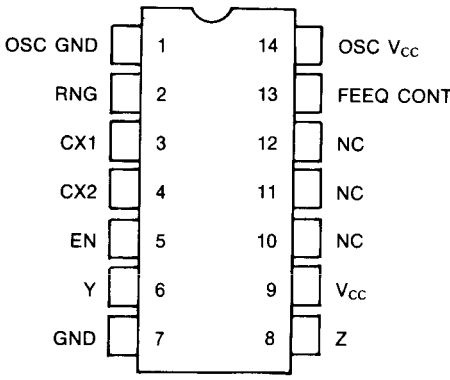




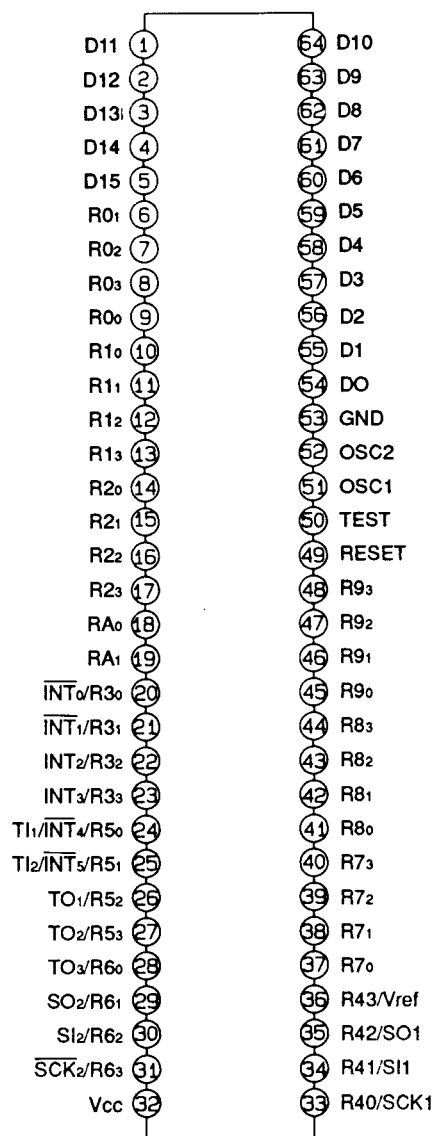
(13) TD6704P (A/D CONVERTOR, XIC301)



(14) SN74LS624 (Voltage Controlled Oscillator, IC704)

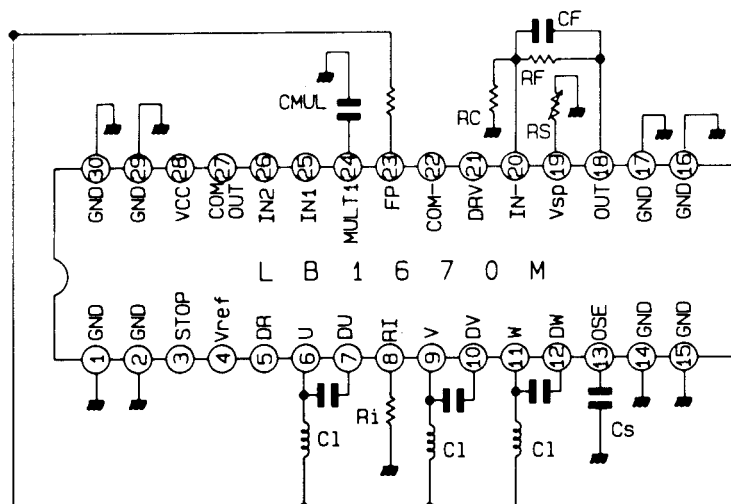


(15) HD4074418S (MICOM, IC751)

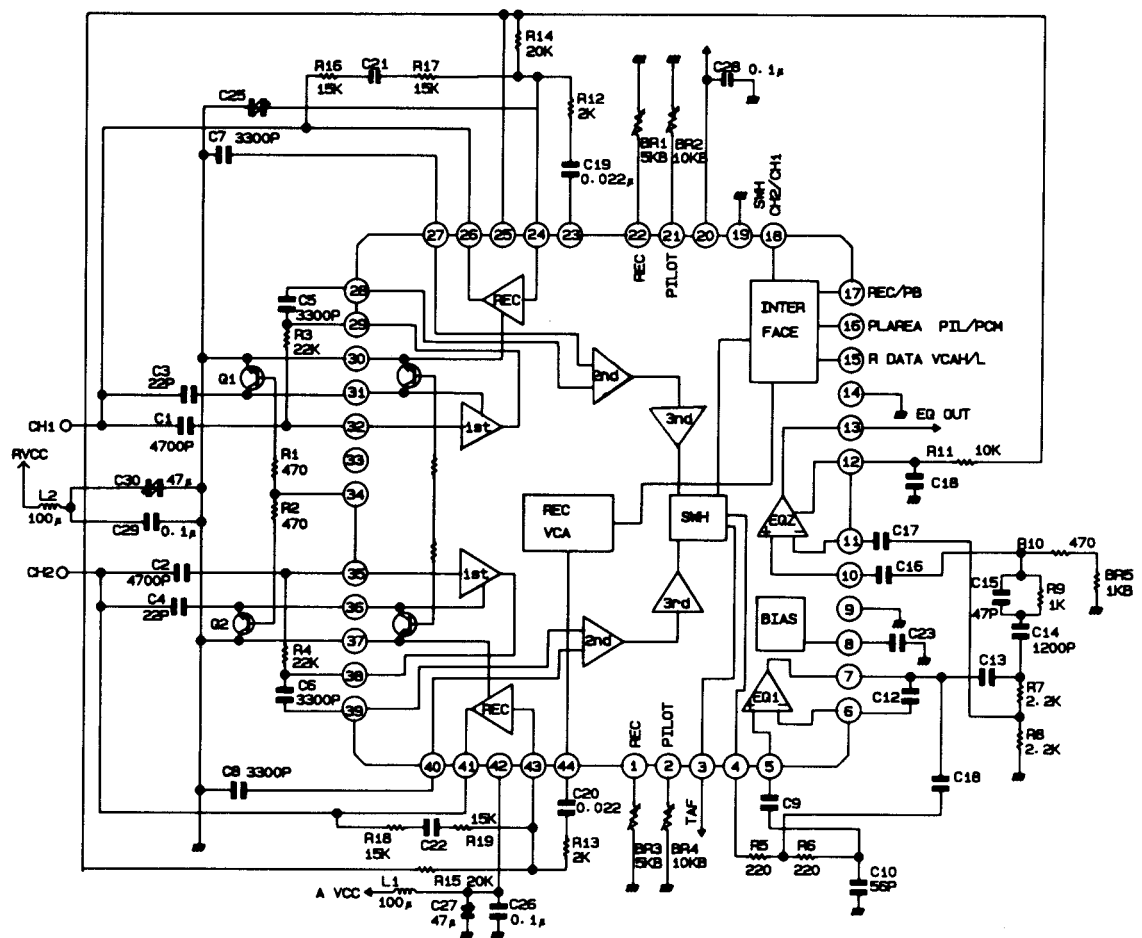


(DP-64S, DC-64S)

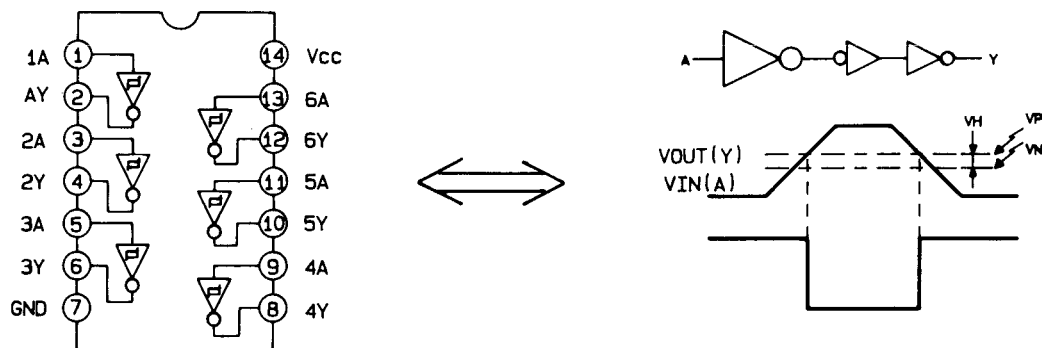
(16) LB1670M (MOTOR DRIVER, IC503)



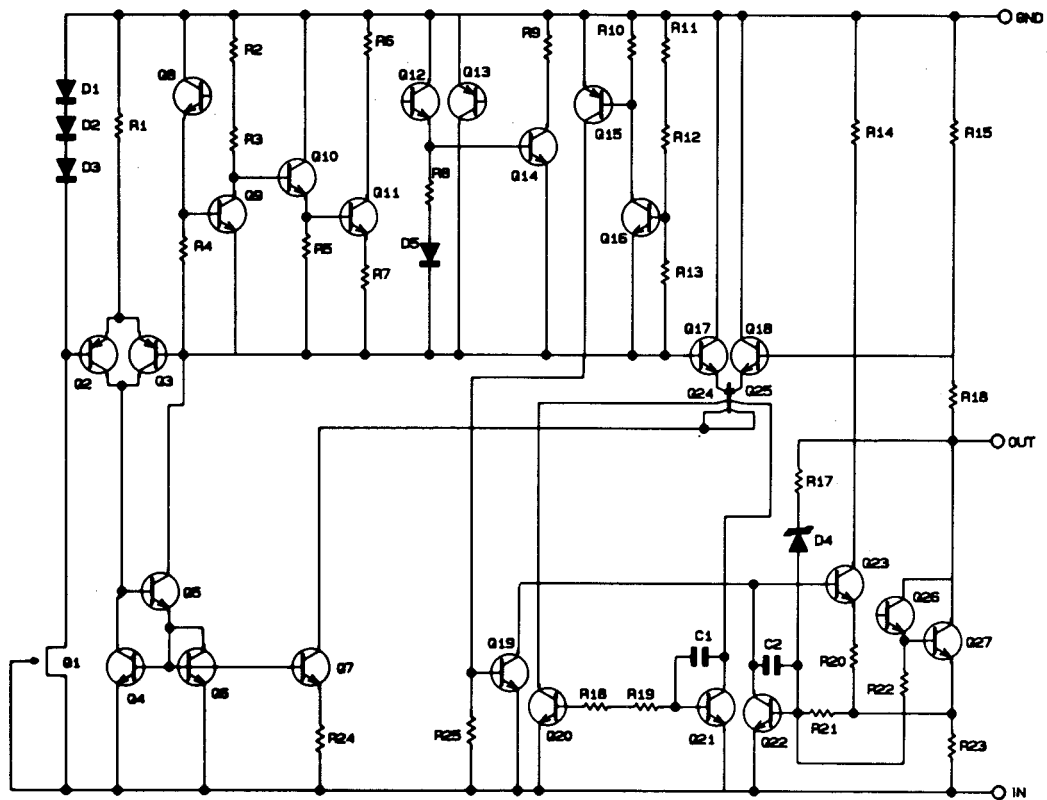
(17) HA12133MP (RF AMP, IC401)



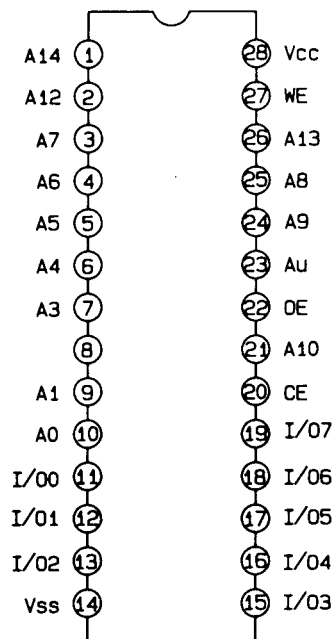
(18) TC74HC14AP (INVERTER, IC753), TC74HCU04AP (INVERTER, IC707)



(19) MC79XX (REGULATOR, RIC902) MC79MXX (REGULATOR, RIC964)



(20) HM652568LFP-15T (S RAM, IC703)



13. MECHANISM AND TAPE

(1) MECHANISM

DAT mechanism has very different features in its structure other than recording method (digital record play) compared to other mechanism.

The recording range of DAT, 0 ~ 5MHz is 100 times wider than normal cassette (3KHz ~ 20KHz) and produce almost original sound with very little noise.

DAT uses a tape smaller in width when it is rolled by 90 degrees to drum. DAT adapts a system which a tape smaller in width is rolled to DRUM by 90 degrees. Though this system enables the unit to search rapidly, since DAT records short waveforms (the shortest waveform is 0.67 μ M), contact between the tape, drum, and head should be securely good and it is important to maintain straightness of track.

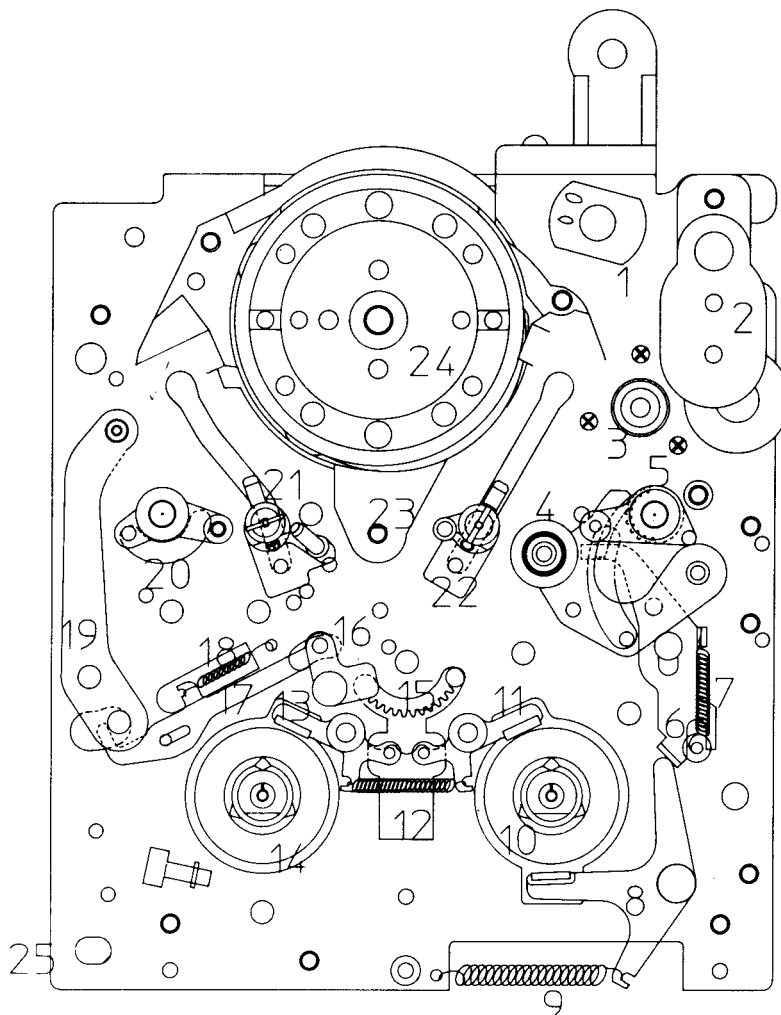


FIG 1-1. UPPER SIDE OF MECHANISM ASS'Y

This is the diagram which clearly shows parts such as loading motor, gear, lever, etc in the main PCB by detaching Head motor.

This diagram is the back side of the main base of a deck to clearly show how the gears actually work among them.

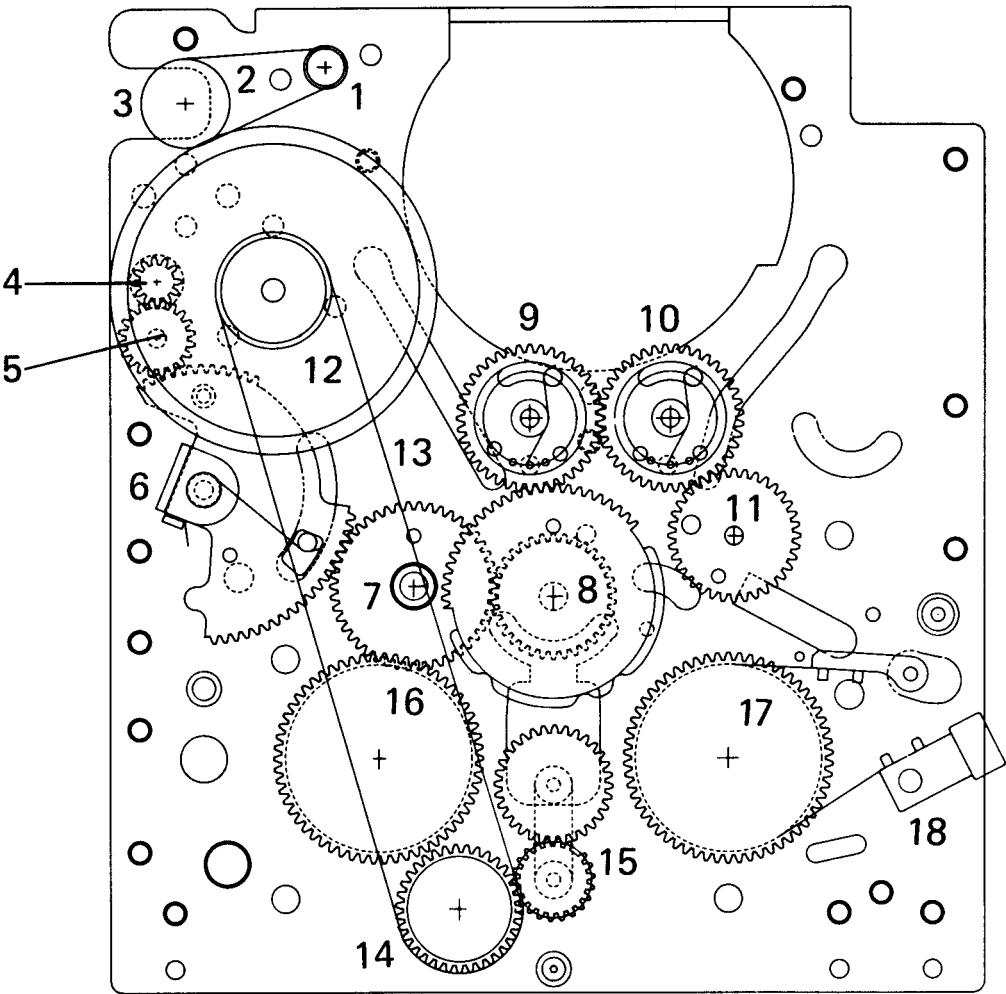


FIG 1-2. BACK SIDE OF DECK ASS'Y

(2) HEAD DRUM

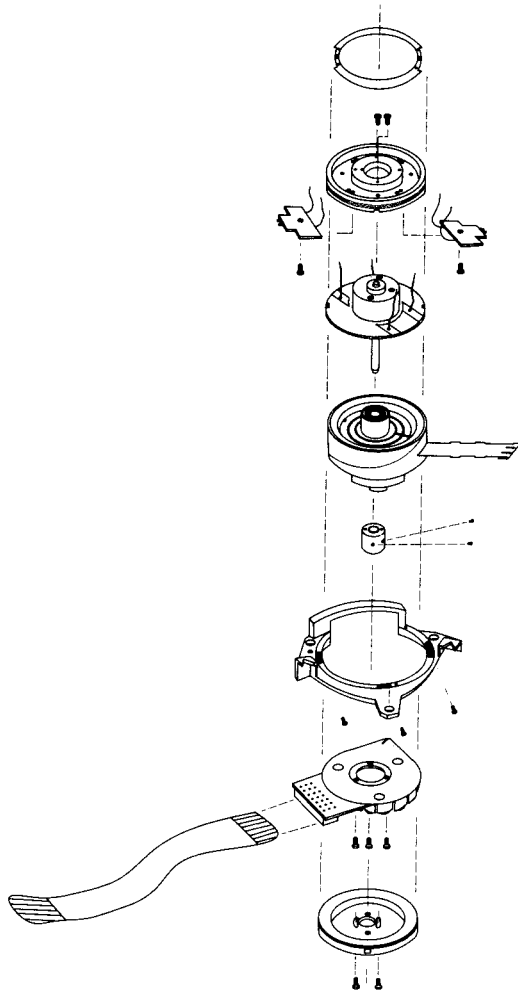


FIG 1-3. DRUM EXPLODED VIEW

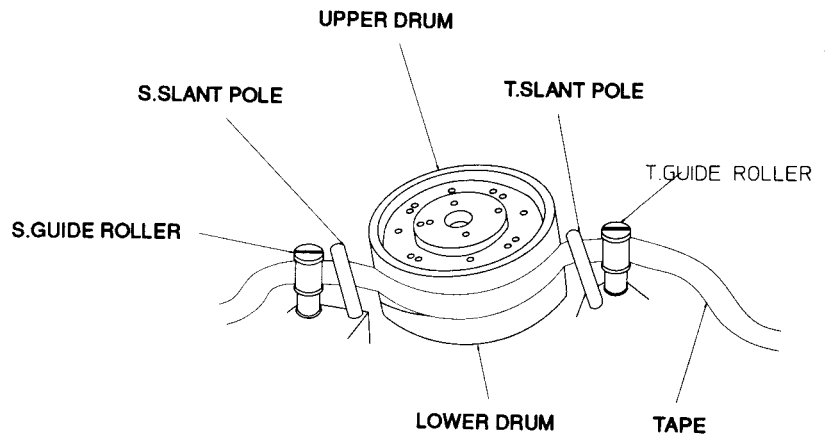


FIG 1-4. DRUM TAPE

DAT DRUM ASS'Y is largely divided into upper and lower drum ass'y and DD motor (DIRECT DRIVE MOTOR). The upper and low drum should be carefully processed and assembled in the degree of μM . MAIN features of each drum are described as follows:

- ① Upper Drum Ass'y : Upper drum consists of 2 heads which is located on 180 degree and each drum is 1 μM wide. 1 μM width records signals directly on tape or detects the signals recorded on tape.
- ② Lower Drum Ass'y : Lower Drum Ass'y consists of trans and bearing
Trans maintains frequency character of between 130KHz and 10MHz keeping the μM s of gap between rotary and stator trans and, upper drum rotates on bearing's axis.
- ③ DD MOTOR (DIRECT DRIVE MOTOR) : DD motor rotating at a speed of 200 rpm consists of PG signal which detects the position of Head assembled to the upper drum, and FG signal which maintains the accuracy of rotation of drum assembly.

(3) TAPE LOADING AND MECHA OPERATION

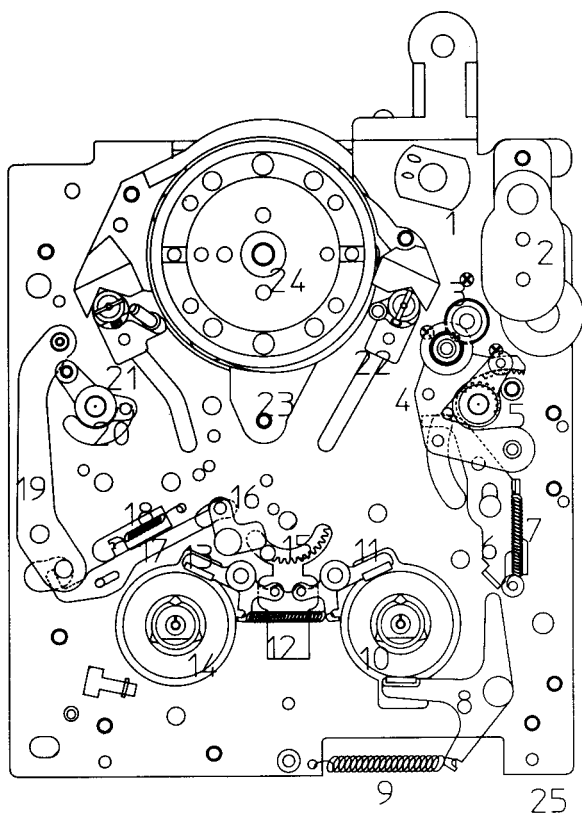


FIG 1-7. SD-1 DECK LOADING

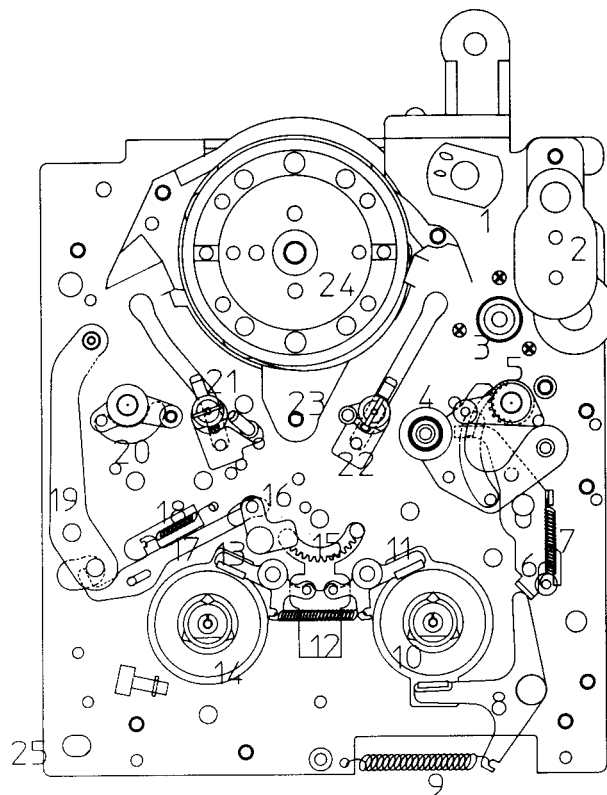


FIG 1-8. SD-1 DECK UNLOADING

- 1) LOADING MOTOR
- 2) GEAR BOX
- 3) CAPSTAN
- 4) PINCH ROLLER
- 5) L6-GUIDE ROLLER
- 6) SKIDE BRAKE
- 7) SPRING SLIDE BRAKE
- 8) SOFT BRAKE
- 9) SPRING SOFT BRAKE
- 10) TAKE-UP REEL
- 11) TAKE-UP BRAKE
- 12) SPRING BRAKE
- 13) SUPPLY BRAKE

- 14) SUPPLY REEL
- 15) CAM GEAR
- 16) CRANK
- 17) SLIDE PLATE
- 18) SPRING SLIDE PLATEER
- 19) TENSION REGULATOR
- 20) P1-GUIDE ROLLER
- 21) SUPPLY GUIDE ROLLER
- 22) TAKE UP GUIDE ROLLER
- 23) DRUM BASE
- 24) DRUM
- 25) DECK MAIN BASE

If a cassette is loaded in the mechanism, cassette detection switch is on.

If the signal is input to the MICOM, the tape loading signal is output to the tape loading motor (No 21, 22 of the figure 1-7, 1-8 move upward).

Figure 1-9, 1-10, 1-11 show the structure of the mechanism more specifically.

If cassette tape loading is recognized, loading motor is to driven and the drive is delivered to the gear box through the belt and pulley gear.

Gear speed will be slow down at the gear box and delivered to the start gear and other gears (6, 7, 8, 9, 10) and finally to the mode switch gear which control mode such as play, stop, fast forward, rewind etc.

Capstan motor makes the drive pulley (14) and idler gear (15) move by the timing belt and move tape up reel and, supply reel which directly roll and unroll the tape.

At this point, torque and tension is regulated by Band Brake, Soft Brake, and Tension Regulator.

- 1) LOADING MOTOR
- 2) BELT
- 3) PULLEY GEAR
- 4) D-CUTT GEAR
- 5) STRT GEAR
- 6) W-GEAR
- 7) MIDDLE GEAR
- 8) CAM-GEAR
- 9) MODE GEAR 'T'
- 10) MODE GEAR 'S'
- 11) MODE SWITCH GEAR
- 12) PULLEY CAPSTAN
- 13) TIMING BELT
- 14) DRIVE PULLEY
- 15) IDLER GEAR
- 16) TAKE-UP REEL
- 17) SUPPLY REEL
- 18) BAND BRAKE

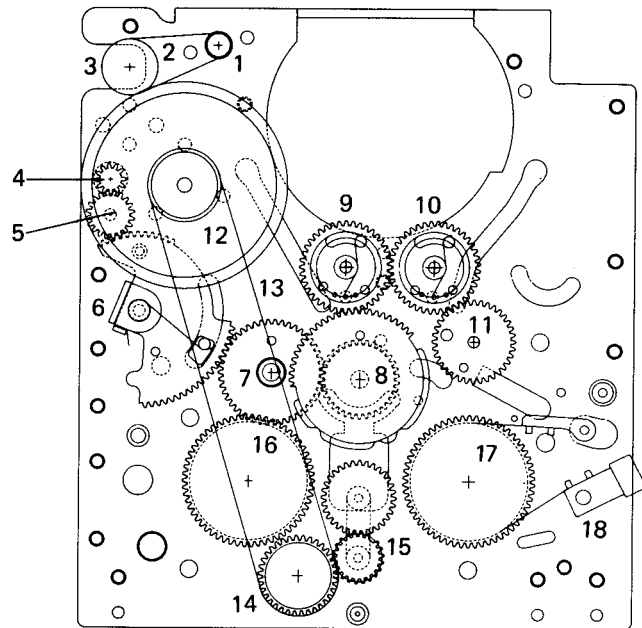


FIG 1-9. DECK L/U MECHANISM

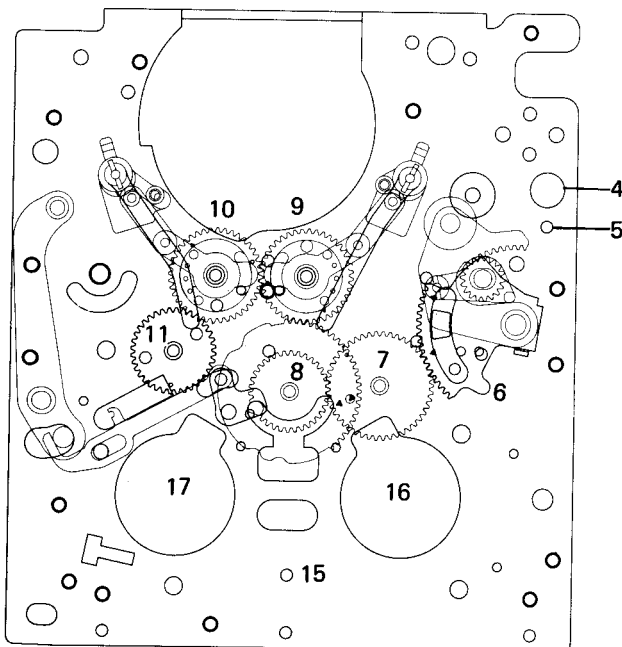


FIG 1-10. DECK LOADING MECHANISM

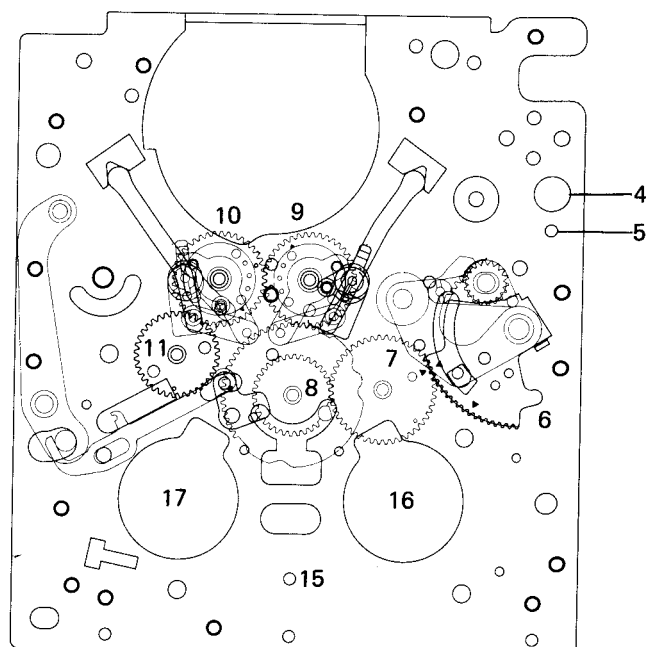


FIG 1-11. DECK-UNLOADING MECHANISM

(4) CASSETTE TAPE LOADING AND ID SWITCH FUNCTION

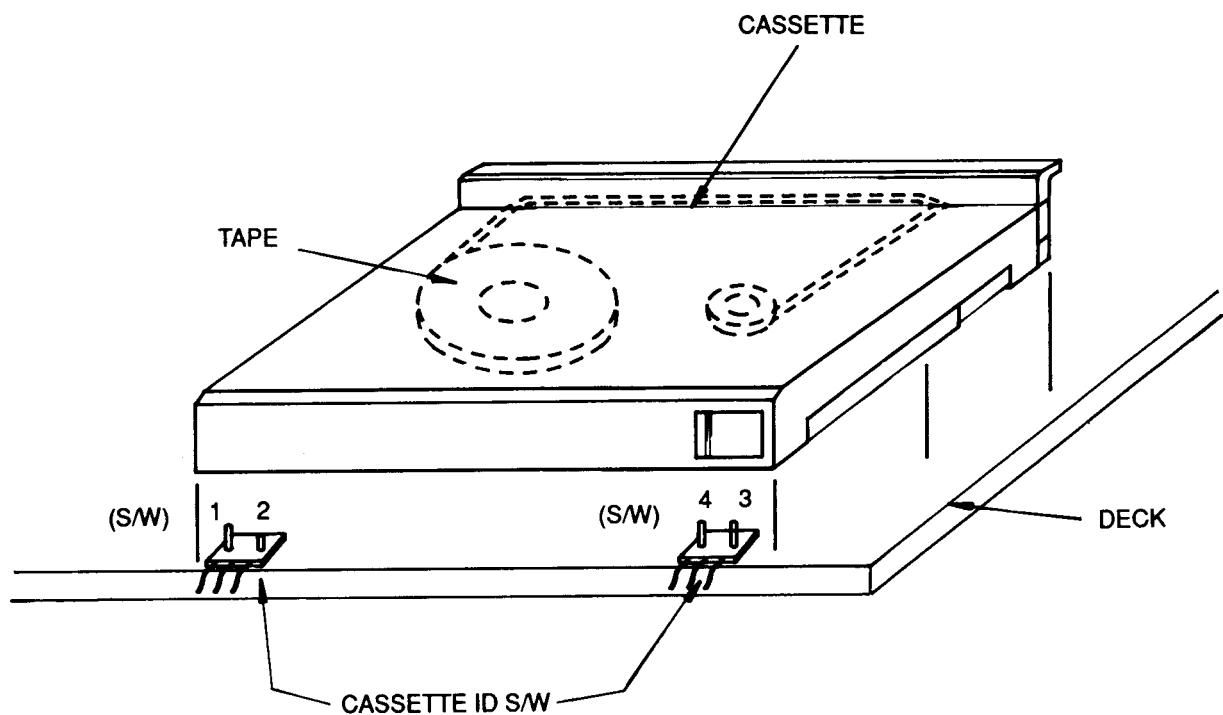


FIG 1-12. CASSETTE TAPE LOADING & ID SWITCH FUNCTION

SW1	SW2	
ON	ON	CASSETTE LOADING (1.5 TRACK PITCH)
OFF	ON	CASSETTE LOADING (NORMAL TRACK)
OFF	OFF	CASSETTE UNLOADING

SWITCH 3	ON	PRE-RECORDED TAPE
	OFF	NON-RECORDED TAPE
SWITCH 4	ON	RECORD ENABLE
	OFF	RECORD DISABLE

(5) PINCH ROLLER OPERATION

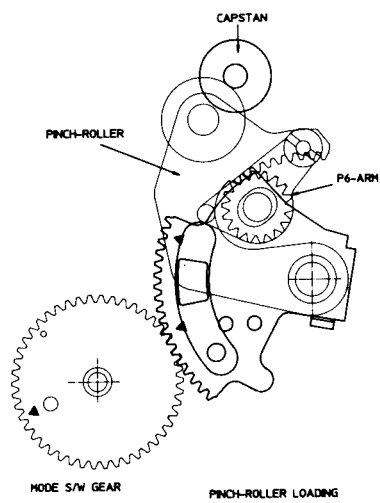


FIG 1-13. PINCH ROLLER LOADING

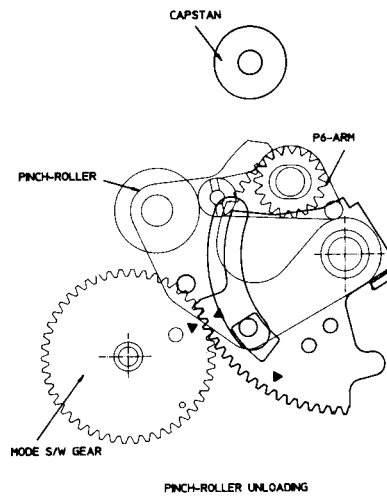


FIG 1-14. PINCH ROLLER UNLOADING

Pinch roller as shown in figure 1-13 power driven by the loading motor (No 1 in figure 1-9) is delivered to the W-Gear. Power delivered to the W-Gear makes the spring in W-Gear turn by the spin of the gear and it drives the Pinch Roller by making the pin connected to the spring turn together. Pinch Roller drives P6-Guide Roller and both are rotated together. When tape loaded by Pole Base are wound up by Take-Up Reel, the Pinch Roller controls to let the tape pass adequately by being pressed to the Capstan. The attachment and angle of the Pinch Roller to the Capstan is very important because the Pinch Roller has a great effect on Tape rotation. Fig 1-13 and 1-14 show the pinch roller attached to and detached from the capstan.

(6) TENSION REGULATOR OPERATION

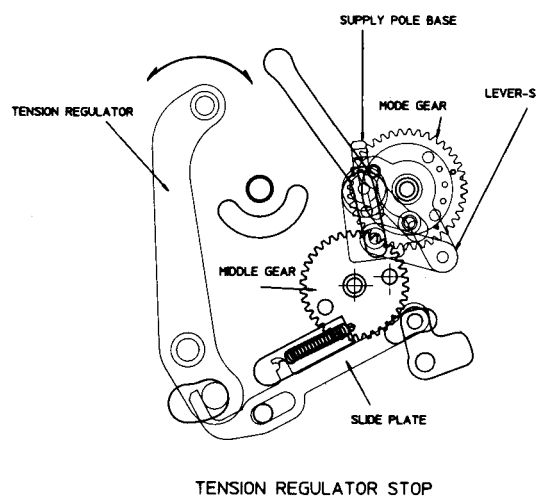


FIG 1-15. TENSION REGULATOR STOP

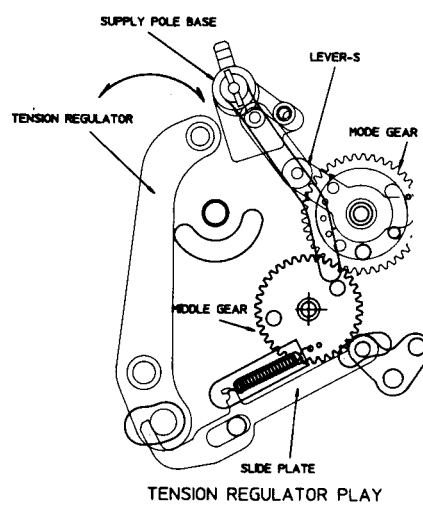


FIG 1-16. TENSION REGULATOR PLAY

Tension regulator controls the tension of a tape regularly during play.

After a cassette is loaded, tension of the tape loaded by the loading motor is different in accordance with the amount of a tape wound in a Take-Up Reel and supply.

Tension should be regulated constantly because the irregular tension can cause the instability of the rolling and damage to the tape. Tension is regulated by the tension regulator connected to the Band Brake on Supply Reel.

Fig 1-15 shows the tension regulator is not in operation and Fig 1-16 shows how the tension regulator under operation regulates tension when a tape passes.

(7) MODE GEAR OPERATION

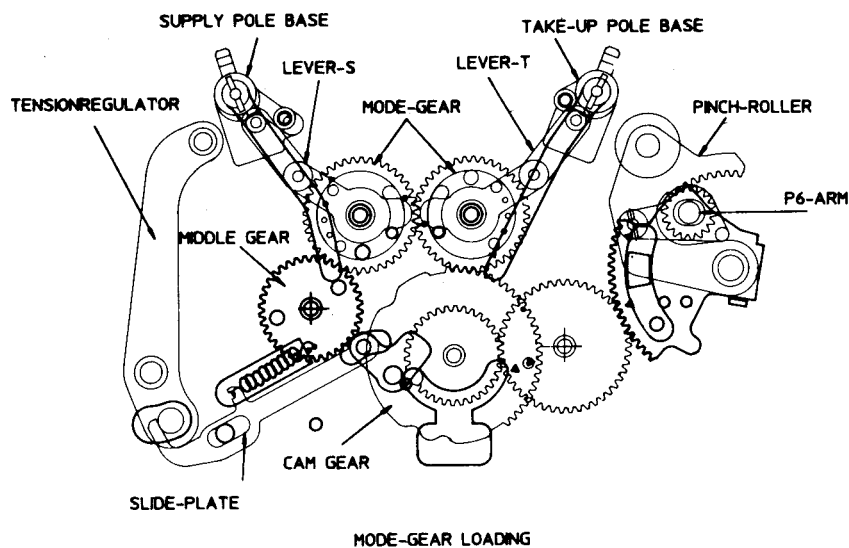


FIG 1-17. MODE GEAR LOADING

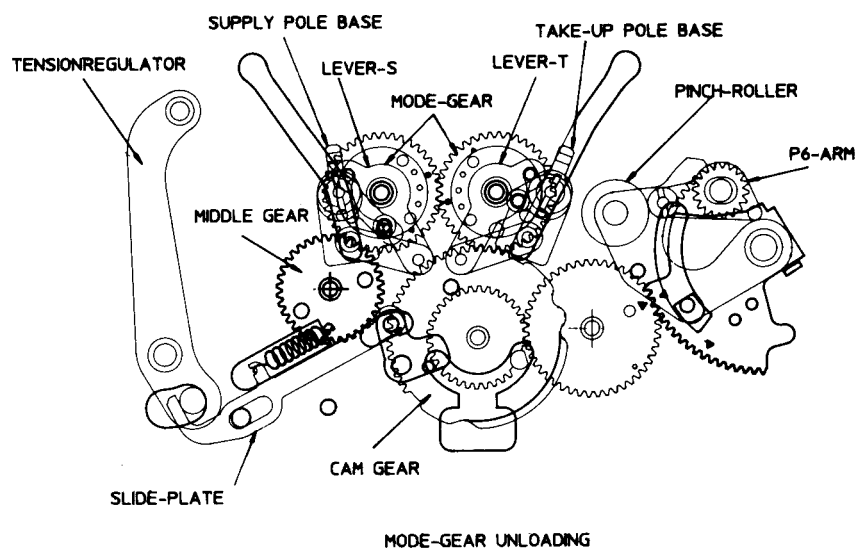


FIG 1-18. MODE GEAR UNLOADING

Functions such as play stop fastforward rewind are controlled by Mode gear. Mode gear driven by the loading motor is operational to let the mode switch on when one of functions is selected by the user. Therefore, rotation angle, position and number of teeth of the mode gear are very important to operate properly Mode gear section is core in driving the Deck.

Fig 1-17 shows the power delivered by loading motor is unloaded to the Poll Base connected to the Lever, and figure 1-18 shows the the power is loaded to the poll.

(8) BRAKE OPERATION

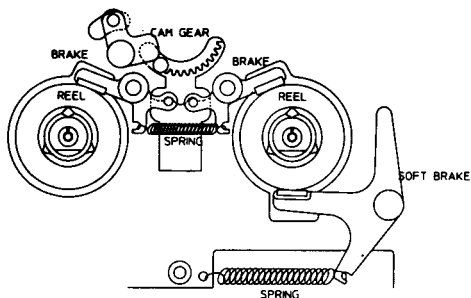


FIG 1-19. BRAKE CLOSE

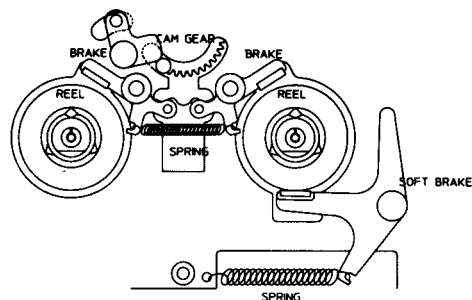


FIG 1-21. SOFT BRAKE CLOSE

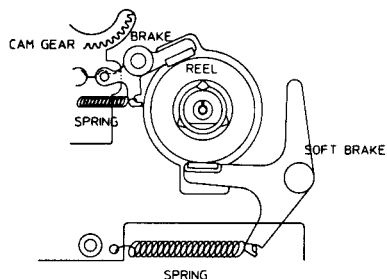


FIG 1-20. BRAKE OPEN

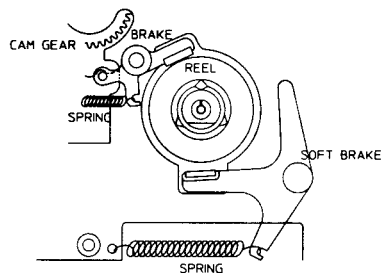


FIG 1-22. SOFT BRAKE OPEN

Above figures show how the brake is in operation. Brake is operational by Cam gear operated by the power delivered by loading motor and let supply and take-up brake attach or dettach the Reel-Hub.

How well the mechanism operates depends on how effectively the brake works.

If the brake operation is bad, tape can be unwound or entangled while loaded, unloaded, or plays, resulting in damage to the tape itself.

Figure 1-19 shows brake in operation and Figure 1-20 shows not in operation (play fast forward CUE, reverse etc) Figure 1-21 and 1-22 show the operation of the soft brake that initiates prompts the take-up-reel and affects torque.

Soft brake is contacted or apart by the slide brake driven by pinch roller.

When the pinch roller is attached to the capstan slide, brake will fall apart/come off and the soft brake is operated by the spring hung on it.

(9) TAPE PLAY BACK

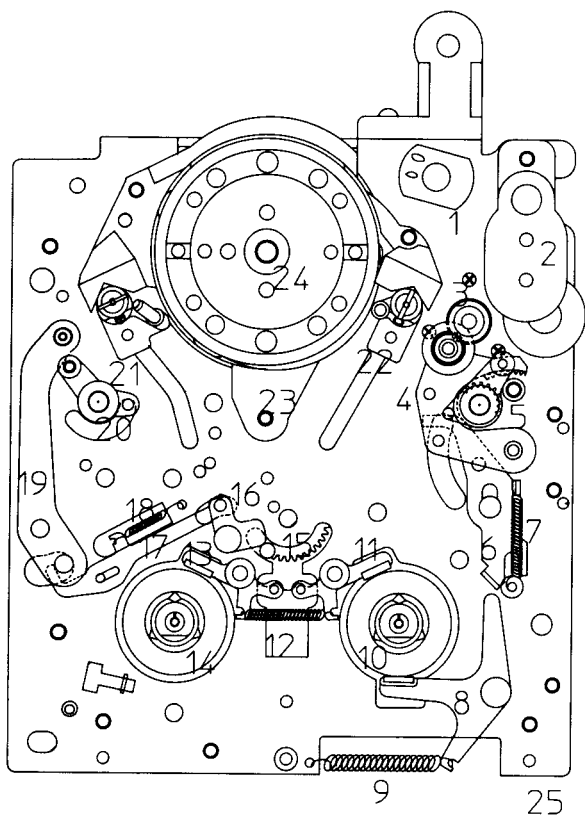


FIG 1-23. SD-1 DECK LOADING

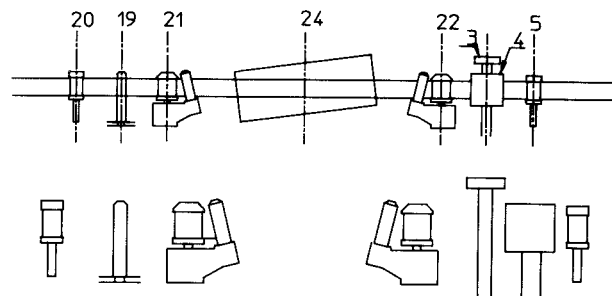


FIG 1-24. TAPE PASS CONDITION

- 1) LOADING MOTOR
- 2) GEAR-BOX
- 3) CAPSTAN
- 4) PINCH ROLLER
- 5) P6-GUIDE ROLLER
- 6) SLIDE BRAKE
- 7) SPRING SLIDE BRAKE
- 8) SOFT BRAKE
- 9) SPRING SOFT BRAKE
- 10) TAKE-UP REEL
- 11) TAKE-UP BRAKE
- 12) SPRING BRAKE
- 13) SUPPLY BRAKE
- 14) SUPPLY REEL
- 15) CAM GEAR
- 16) CRANK
- 17) SLIDE BRAKE
- 18) SPRING SLIDE BRAKE
- 19) TENSION REGULATOR
- 20) P1-GUIDE ROLLER
- 21) SUPPLY GUIDE ROLLER
- 22) TAKE-UP GUIDE ROLLER
- 23) DRUM BASE
- 24) DRUM
- 25) DECK MAIN BASE

Figure 1-23 shows that tape has been loaded and if it is unfolded crossway it is to be like figure 1-24.

In rotative drum system, in order to let tape pass, tape should be targled on the drum.

1) DURING PLAY

First, tape is unwound from the left-supply-reel No 20 is exit guide roller. This guide-roller controls the height of tape exit and to tension regulator which controls back tension to be controlled by band-brake on supply-reel.

Then the tape is to be wound on supply guide roller (21) and controls the height of lower part of a tape.

If the tape comes out after being tangled by the drum, the guide roller (22) controls the height of the upper part of a tape.

Low and upper height of a tape is controled in FF, REW, CUE, CUE, and BACK, NEXT mode as well as in play mode. And tape speed is controlled at a constant level by the pinch roller (3) and capstan (4) and the tape is to be wounded on take-up-reel by p6 guide roller (5).

2) HIGH SEARCH OR TRANSPORT

Procedures that tape goes are the same as in during play except that pinch roller is detached from capstan.

3) REVERSE HIGH SEARCH AND TRANSPORT

Procedures that tape travels are completely oppostie and pinch roller is to be off the capstan and tension regulator is also to be off the supply reel.

(10) ROTATION OF REEL

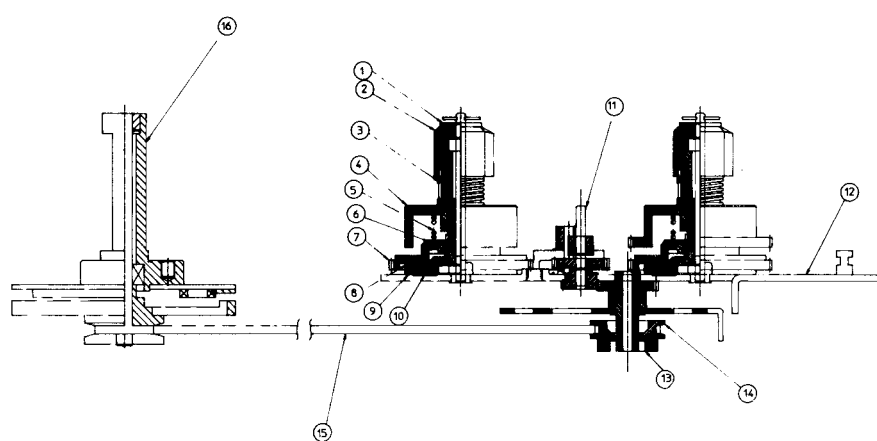


FIG 1-25. REEL-ASSY LOADING MECHANISM

- ① CAP
- ② SPINDLE
- ③ SPRING
- ④ SPRING-SUPPLY
- ⑤ SPRING-SUPPLY
- ⑥ WASHER-REEL
- ⑦ GEAR-REEL
- ⑧ FELT-REEL
- ⑨ DISK-REEL
- ⑩ FG-SHEET
- ⑪ IDLER-ASSY
- ⑫ REEL-PLATE
- ⑬ DRIVE-PULLEY
- ⑭ DRIVE-ASSY
- ⑮ TIMING-BELT
- ⑯ CAPSTAN

As capstan motor rotates, power is transported to supply and take up reel through 13), 14), 11) by using capstan pulley and timing belt.

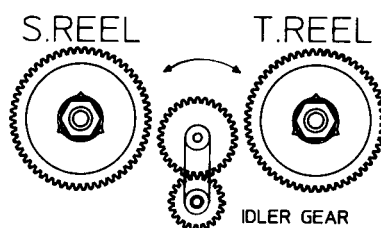


FIG 1-26. LOLER GEAR OPERATION

① DURING PLAYBACK OR RECORD

It tape is put in, tape is to be loaded and reel is to be in standby

In play mode, capstan motor at a speed of 8.15mm/sec makes Pulley connected to the Timing Belt rotate. An then playback record can be made as the Take-up reel is rotated by the Idler gear. Figure 1-27 shows the top view of reel.

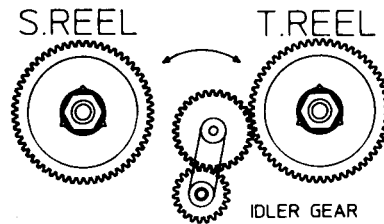


FIG 1-27. PLAY

② DURING HIGH TRANSPORT AND HIGH SEARCH

In fast transporting, high search or reverse mode, reel operates just as shown in the figure 1-29. If capstan motor rotates, power will be transmitted to the supply reel and take up reel by the pulley and idler gear.

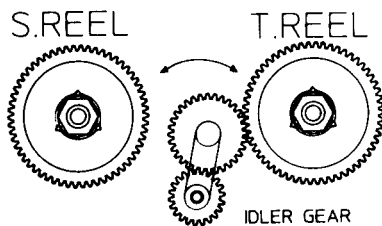


FIG 1-28. FF

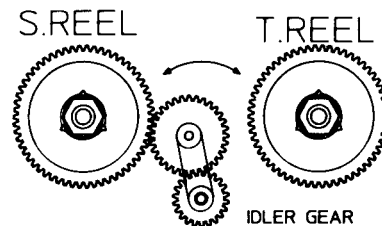


FIG 1-29. REW

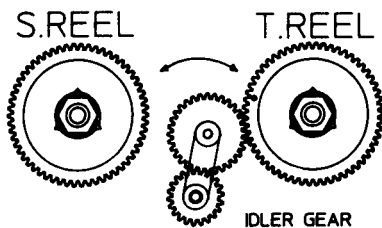


FIG 1-30 CUE

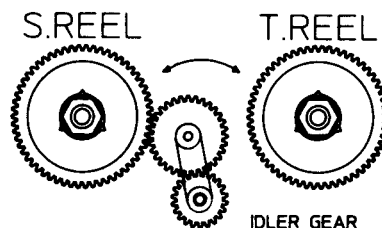


FIG 1-31 REV

14. PARTS LIST

1) MAIN PCB ASS'Y

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
WVR604, 605	11249-113-110	VR-SEMI ; RH0614C100 472 (4.7KB)	2	
WVR603	11249-113-130	VR-SEMI ; RH0614C100 103 (10KB)	1	
WVR606	11249-113-210	VR-SEMI ; RH0614C100224 (220KB)	1	
WVR701	11249-902-010	VR-SEMI, FIXED ; VZ066L, 10KB, HDK	1	
IC752	12109-401-880	IC-MOTOR DRIVER ; TA7288P	1	
WIC702	12119-102-380	IC-DATA STROBE ; HA12062AMP	1	
IC705	12119-102-500	IC-DIGITAL FILTER ; SM5803APT	1	
IC701	12119-102-640	IC-DSP ; HD49211BFS	1	
IC601	12119-102-650	IC-SERVO ; HD49212	1	
IC751	12119-102-670	IC-MICOM ; HD4074418S	1	
IC703	12119-102-900	IC-S RAM ; HM65256BLFP-15T	1	
Q606	12149-201-480	TRANSISTOR ; KSB 772-Y	1	
L705	12450-302-831	COIL-DIGITAL I/O T RANS ; FTR9PIB-1500	1	
L706	12619-030-021	COIL VCO ; 332PC-K7082N	1	
CN601, CN402	13070-084-130	CONNECTOR-WIRE ; 51004-04/51004-04 1533 #28 300MM	1	
CN701, 401	13070-099-230	CONNECTOR WIRE ; 51004-09/51004-09 2547 #28 300MM	1	
FLAG, 702	13124-500-110	TEST-PIN ; PI 1.0 x 13.5 MM BSBM2	5	
OP01	13339-415-010	JACK OPT ; TOTX172	1	
OP02	13339-415-020	JACK OPT ; TORX172	1	
JK01, 02	13339-524-050	JACK-RCA 1P ; S155B (1P)	2	
CN756, 601	13349-119-040	CONNECTOR-WAFER ; 53014-0410, MOLEX	2	
CN701	13349-119-090	CONNECTOR-WAFER ; 53014-0910, MOLEX	1	
CN755	13349-147-180	CONNECTOR-WAFER ; 5597-18CPB	1	
CN759	13349-119-020	CONNECTOR-WAFER ; 53014-0210 MOLEX	1	
CN602	13349-119-120	CONNECTOR-WAFER ; 53014-1210 MOLEX	1	
SW01, 02	13519-930-220	SWITCH-SLIDE ; 00120050 IC-2P	2	
LP601	14529-403-060	FILTER LOW PASS ; A287LNJS-K5230LQAF	1	
BP601	14529-703-010	FILTER BAND PASS ; A288BNJS-K5231VPD	1	
NF703, 704, 705, 707, 714	14529-810-010	FILTER-NOISE ; ZJSR5101-101	5	
NF711, 712, 713	14529-810-020	FILTER-NOISE ; ZJSR5101-470	3	
NF701, 702, 706, 708, 709	14529-810-030	FILTER-NOISE ; ZJSR5101-330	5	
NF710, 715			2	
X702	14539-501-100	X-TAL ; HC-49/U 11.2896M	1	
X701	14539-501-110	X-TAL ; HC-49/U 12.288M	1	
X703	14539-501-120	X-TAL ; HC-49/U 37.632M	1	
X751	14539-501-130	X-TAL ; HC-49/U 8.000M	1	
Q606	15684-507-610	HEAT-SINK ; EXTR AL WHT	1	
Q606	17458-230-101	SCREW-TAP TITEBH ; 2S-3 x 10 FE FZY	1	

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
IC706	12119-102-800	IC-NAND ; TC74HC00AP	1	
IC707	12119-102-820	IC-INVERTER ; TC74HCU04AP	1	
IC753	12119-102-890	IC-INVERTER S, T ; TC74HC14P	1	
IC704	12119-203-010	IC-VCO ; SN74LS624	1	
IC602	12119-203-250	IC OP AMP ; LM224N	1	
IC603	12119-203-260	IC OP AMP ; LM258N	1	
IC754	12119-203-280	IC COMPARATOR ; LM293N	1	
Q753, 754	12149-301-840	TRANSISTOR ; KSC900-L, TAPE	2	
Q704, 705, 751, 602, 603	12149-301-900	TRANSISTOR ; KSC945-Y, TAPE	5	
Q706, 707, 708, 709, 752	12159-301-780	TR DIGITAL ; KSR1003	5	
Q604, 605, 701			3	
D751, 752, 753, 754, 755	12169-301-290	DIODE-SW ; 1SS53/1N4148, CT: 6PF	5	
D756, 757, 758, 759, 601			5	
L706	12429-311-330	COIL-AXIL ; 33UH-04	1	
L704	12429-311-339	COIL ; 3.3UH, AXIAL	1	
L701, 703, 601	12429-311-479	COIL-AXIAL ; 4.7UH (LAL03NA4R7K)	3	
L702	12429-411-100	COIL-CHOKE ; LA02NA 100K	1	
CN754	13349-103-053	CONNECTOR-WAFER ; STICK 5267-05A 5P	1	
CN705	13349-512-520	CONNECTOR-WAFER ; STICK 5045-02A 2P-TYPE	1	
CN753	13349-512-562	CONNECTOR-WAFER ; STICK 5267-04A 4P-TYPE	1	
CN702, 703	13349-512-565	CONNECTOR-WAFER ; STICK 5267-06A 6P-TYPE	2	
CN751	13349-512-566	CONNECTOR-WAFER ; STICK 5267-09A 9P-TYPE	1	
CN752	13349-512-569	CONNECTOR-WAFER ; STICK 5267-08A 8P-TYPE	1	

2) ANALOG PCB ASS'Y

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
XCN305/WCN702	13052-900-040	CONNECTOR-WIRE ; 5264-06/5264-06 2854 #28 300M/M	1	
XCN306/WCN703	13052-900-050	CONNECTOR-WIRE ; 5264-06/5264-06 2854 #28 200M/M	1	
RCN901/WCN501	13079-377-430	CONNECTOR-WIRE ; 5264-09/5264-09 1007 #26 300M/M	1	
	17148-530-081	SCREW-TAP, RH ; 2S-3 x 8 FE FZY	12	
RR901	11048-477-222	R-METAL OXIDE ; RS1T 2.2K-J MINI TYPE	1	
RR906	11058-277-479	R-FUSIBLE ; RF 1/4T 4.7-J	1	
XVR301, 302	11249-002-030	VR-SEMI, FIXED ; VZ066L 20KB HDK	2	
XVR103, 203	11249-002-050	VR-SEMI, FIXED ; VZ066L, 2KB, HDK	2	
XVR102, 202	11249-902-020	VR-SEMI, FIXED ; VZ066L, 100KB, HDK	2	
XIC301	12109-303-100	IC-ADC ; TD6704P	1	
RIC901	12109-401-690	IC-REGULATOR ; MC7812C	1	
RIC902	12109-401-700	IC-REGULATOR ; MC79 12C	1	
XIC101, 103, 201, 203, 303	12119-401-291	IC-OP AMP ; NJM2082S	5	
RIC302, 907, 908, 903	12119-601-770	IC-REGULATOR ; MC7805	4	

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
RIC904	12119-601-820	IC-REGVLATOR ; MC79M05	1	
RIC905, 906	12119-601-830	IC REGVLATOR ; MC7806	2	
RD907, 910	12169-201-090	DIODE-RECTIFIER ; 1N 4002, TAPE	2	
RD906	12169-209-150	DIODE BRIDGE ; 3N246 1A 50V	1	
RD905	12169-219-210	DIODE-RECT ; 2KBP02	1	
XJK03, 04	13339-403-040	JACK-RCA ; S-142P (K, C, E)	2	
	13954-500-210	CERAMIC-PIPE ; PI1.4 7MM	2	
XLP101, 201	14529-413-020	FILTER-LOW PASS ; LP22D9B2AE	2	
XX301	14539-504-080	SAW RESONATOR ; F81KM	1	
IC905, 906, 907	15684-507-510	HEAT-SINK, "S" ; AL EXTR	3	
IC901, 902, 908	15684-509-730	HEAT SINK ; EXTR AL 48N DAT7000	3	
HEAT SINK+ANALOG PCB	17458-230-101	SCREW-TAP TITEBH ; 2S-3 x 10 FE FZY	6	
HEAT SINK+IC-REQUATOR			6	
XIC102, 202	12109-310-470	IC-D/AC ; PCM 56P	2	
RIC909	12119-102-810	IC-INVERTER ; TC74HC04AP	1	
XQ302, 903	12149-101-560	TRANSISTOR ; KSA708-Y, TAPE	2	
RQ901	12149-101-590	TRANSISTOR ; KSA931-Y, TAPE	1	
RQ904, 905	12149-301-900	TRANSISTOR ; KSC945-Y, TAPE	2	
XQ101, 201, RQ902	12149-301-930	TRANSISTOR ; KSC1008-Y, TAPE	3	
Q301	12159-301-820	TR DIGITAL ; KSR2001	1	
RD901, 902, 903, 904	12169-201-080	DIODE-RECTIFIER ; 1N 4001, TAPE	4	
XD301, 302, 303, 304, 306	12169-301-290	DIODE-SW ; 1SS53/1N4148, CT: 6PF	5	
RD909, 915, 919, XD305			4	
RZD912	12169-403-690	DIODE-ZN ; 500MW UZ-6.8 BH	1	
RZD913, 914	12169-403-700	DIODE-ZN ; 500MW UZ-10BL	2	
XZD307	12169-403-710	DIODE-ZN ; 500MW UZ-10BH	1	
RZD911	12169-403-720	DIODE-ZN ; 500MW UZ-30BL	1	
RZD908	12169-404-130	DIODE-ZN ; 500MW 5.3-5.9V UZ-5.6BM	1	
XCN101, 201, 301, RCN904	13349-512-562	CONNECTOR-WAFER ; STICK 5267-04A 4P-TYPE	4	
XCN305, 306, RCN902, 903	13349-512-565	CONNECTOR-WAFER ; STICK 5267-06A 6P-TYPE	4	
RCN901	13349-512-566	CONNECTOR-WAFER ; STICK 5267-09A 9P-TYPE	1	
XCN303	13349-527-502	CONNECTOR-WAFER ; STICK 5267-03A 3P	1	

3) SUBI ASS'Y (REC/V, TIMER, FUSE, H/P) PARTS.

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
XVR303	11219-151-010	VR-DOUBLE ; RK16122F0 004 52B	1	
XCN101/102, XCN201/202	13078-384-140	CONNECTOR-WIRE BS ; 5264-04 15395 1533 #28 400M/M	2	
UCN805	13349-102-040	CONNECTOR-WAFER ; 5268-04A TYPE	1	
USW03	13519-201-290	SW-SLIDE ; SSSS312N E011	1	
USW04	13519-201-300	SWITCH-SLIDE ; SSSS313G E011	1	
RC937	11469-101-010	C-CERAMIC, AC ; DE7150FZ 103P VA1-KC ALL	1	
AC	13124-100-710	TAP-STUD ; 0.5T SPC1 BT2	2	
CN905	13349-444-030	CONNECTOR-WAFER ; GT-PIN UL94V-1 1086P03-0013 3P	1	
SW901	13599-902-040	SW-POWER ; SDDL1PCH L011	1	
LF901	14529-819-010	EMI FILTER ; HP1-P25	1	
C937	16034-503-210	COVER-CONDANSER ; PVC, CC-101	1	
XVR304	11219-143-040	VR DOUBLE ; RK1631210 5A6 23B	1	
RC316, 317	11608-103-104	C-ELECTROLYTIC ; CE04W T 16V 100M (6.3 x 11)	2	
RC324, 325	11608-106-222	C-ELECTROLYTIC ; CE04W T 50V 2.2M (5 x 11)	2	
RIC304	12119-401-330	IC OP AMP ; NJM, 4556S	1	
XCN301/302	13078-384-140	CONNECTOR-WIRE BS ; 5264-04 15395 1533 #28 400M/M	1	
XCN303/304	13078-473-240	CONNECTOR-WIRE/B, S ; 5264-03/5395-03 1061 #26 400	1	
RJK05	13339-101-530	PHONE-JACK ; HLJ2315-01-3110 (GOLD)	1	
	12869-222-400	TRANS POWER ; EI 66 x 35 220V 50Hz DT850/WEL	1	
AC	13059-808-246	POWER CORD ASSY ; KKP-4 19C/B-161 W/S 200M/M	1	
F01	13164-550-010	CLIP-FUSE ; FC51E	2	
F01	14709-241-110	FUSE ; T 250V 0.315A 20 EUR	1	
RC118, 218	11447-919-103	CONDENSER AXIAL-LEAD ; 16V EP050 Y10000-M	2	
RC117, 217	11449-117-470	CONDENSER AXIAL-LEAD ; 50V UP 050 SL47-J	2	

4) DRUM DRIVEW PCB ASS'Y PARTS

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
	15009-545-900	HOUSING-MECHA ASSY ; DT-850	1	
CN503	13077-017-730	CONNECTOR-WIRE/B, S ; 51004-121 BS20-12 1007 # 26 300	1	
CN501	13349-147-150	CONNECTOR-WAFER ; 5597-15APB	1	
CN502	13349-164-100	CONNECTOR-WAFER ; 52030-1010	1	
IC502	12109-401-800	IC-MOTOR DRIVER ; TA7745F	1	
IC503	12119-203-490	IC-MOTOR DRIVER ; LB1670M	1	
IC501	12119-401-910	IC-OP AMP ; NJM324M	1	
Q501, 502, 503	12149-101-560	TRANSISTOR ; KSA708-Y, TAPE	3	
D501	12169-301-290	DIODE-SW ; 1SS53/1N4148, CT: 6PF	1	

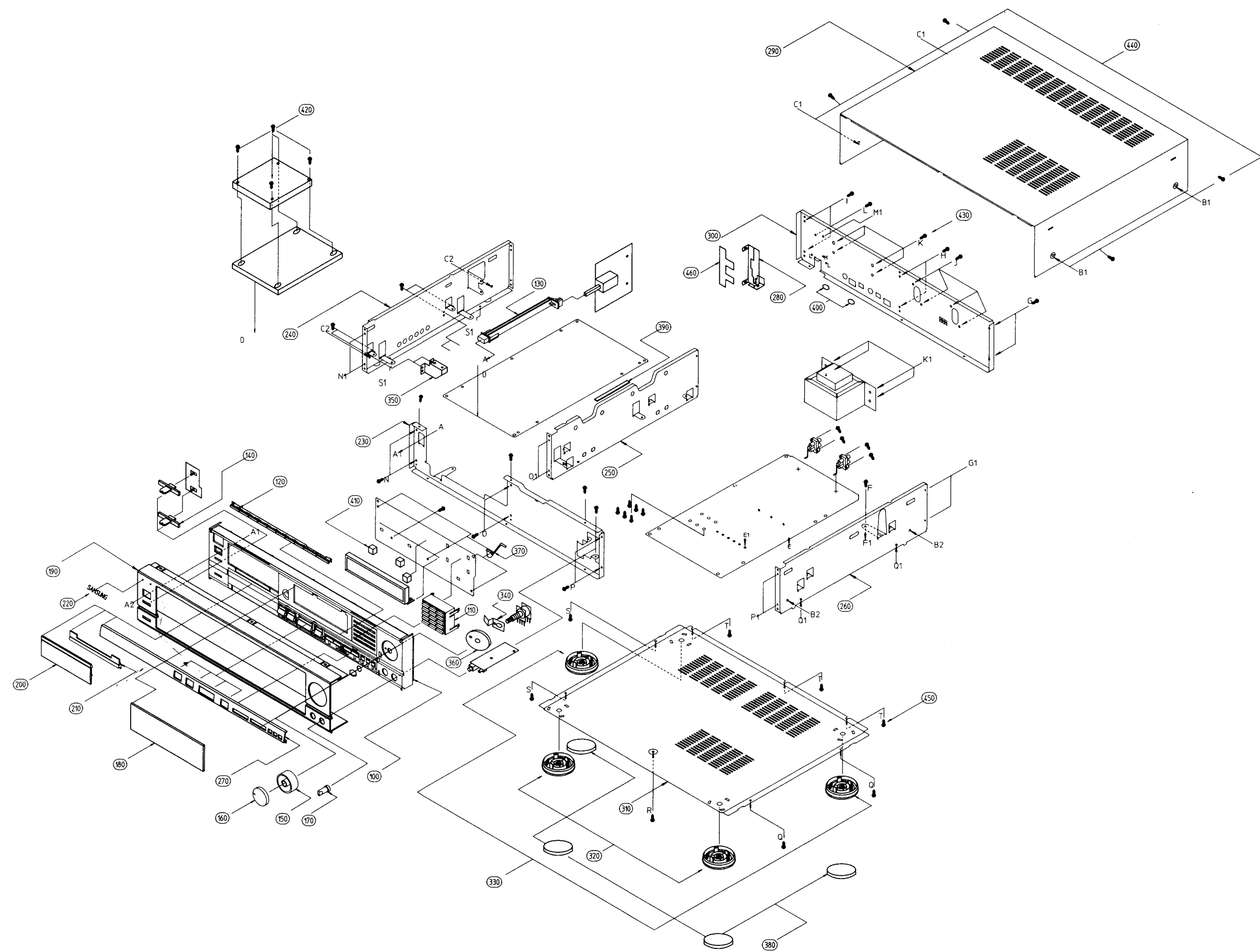
5) FRONT PCB ASS'Y PARTS

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
UR835, 837, 838	11060-808-002	R-NETWORK ; RMLS7 J472	3	
URE801	12199-101-050	REMOCON EYE ; GP1U501X1 701R	1	
UFL01	12339-107-010	FIP ; FIP12 BQM7	1	
	13059-201-143	LEAD FASTEN ; RING 140M/M BLK	1	
RCN902/UCN804	13088-376-120	CONNECTOR-WIRE/B, L ; 5264-06/JC25 1007 #26 200M/M	1	
WCN752/UCN803	13088-418-150	CONNECTOR-WIRE/B, L ; 5264-08/JC25-08 1007 #26 500M	1	
UCN805/806	13088-474-130	CONNECTOR-WIRE/B, L ; 5264-04/JC25-04 1061 #26 300M	1	
WCN753/802	13088-474-150	CONNECTOR-WIRE/B, L ; 5264-04/JC25-04 1061 #26 500M	1	
USW30, 31, 32, 33, 34	13559-901-100	SWITCH-TACT ; SKHVB029A	5	
USW35, 36, 37 38, 39			5	
USW40			1	
USW05, 06, 07, 08, 09	13559-901-090	TACT SWITCH ; SKHVBG007A	5	
USW10, 11, 12, 13, 14			5	
USW15, 16, 17, 18, 19			5	
USW20, 21, 22, 23, 24			5	
USW25, 26, 27, 28, 29			5	
UX801	14534-504-040	CERAMIC-RESONATOR ; CSA4.00MG	1	
UD801, 802, 803, 804, 805	12169-301-290	DIODE-SW ; 1SS53/1N4148, CT: 6PF	5	
UD806, 807, 808, 809, 810			5	
VZD801, 802, 803	12169-403-310	DIODE-ZENER ; RD5.1E, 0.5W, NEC	3	

6) RF AMP PCB ASS'Y PARTS

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
IC401	12119-102-730	IC-RF AMP ; HA12133MP	1	
L401, 402	12429-305-151	COIL-CHOKE ; 150UH Q50	2	
CN402	13349-139-040	CONNECTOR-WAFER ; 53015-0410	1	
CN401	13349-139-090	CONNECTOR-WAFER ; 53015-0910	1	
CN403	13349-147-070	CONNECTOR-WAFER ; 5597-07APB	1	
VR403	11105-100-010	VR-CHIP SEMI ; RH03APA13 x 01A, 1K	1	
VR401, 451	11105-100-020	VR-CHIP SEMI ; RH03APA J3 x 01A, 2.2K	2	
VR402, 452	11105-100-030	VR-CHIP SEMI ; RH03APA S3 x 01A, 4.7K	2	
Q401, 451, 452	11139-801-210	TR-CHIP ; BC817-40	3	

15. MECHANICAL EXPLODED VIEW



1) MECHANICAL PART'S LIST

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
100	16000-537-010	CABINET-FRONT ; ABS HI 153 BLK	1	OPTION
110	17622-501-210	KNOB-15KEY ; ABS HI153 BLK	2	
120	17622-501-410	KNOB-10KEY ; ABS HI153 BLK	2	
130	17623-569-910	KNOB-POWER ; ABS HI153 BLK	1	
140	17624-616-410	KNOB-TIMER ; ABS HI153 BLK	1	
150	17624-619-310	KNOB-REC, A ; ABS HI153 BLK	1	
160	17624-619-410	KNOB-REC, B ; ABS HI153 BLK	1	
170	17624-619-510	KNOB-MIX VOL ; ABS HI153 BLK	1	
180	17643-520-810	WINDOW-FLT ; ACRYL 3.0T SMOKE	1	
190	17701-500-510	PANEL FRONT ; EXTR AL	1	
200	17824-524-320	DECO-TRAY ; EXTR AL DAT7000N	2	
210	17824-524-410	DECO-FRONT, A ; EXTR AL	1	
220	18024-601-010	BADGE-BRAND ; AL DT-850/WEL (SAMSUNG)	1	
230	16121-502-410	CHASSIS-FRONT ; E.G. 1.0T DAT7000	1	
240	16121-502-510	FRAME-LEFT ; EG 1.0T DAT7000	1	
250	16121-502-610	FRAME-CENTER ; E.G 1.0T DAT7000	1	
260	16121-502-710	FRAME-RIGHT ; E.G 1.0T	1	
270	17823-507-310	DECO-KNOB ; AL EXTRA BLK	1	
280	16623-509-810	BRKT-AC/CORD ; SECC 1.0T DAT7000	1	
290	16101-501-120	CABINET-TOP ; VINYLE SHEET 0.85T DAT7000N	1	
300	16121-502-820	CHASSIS-REAR ; EG 1.0T BLK DAT7000N	1	
310	16131-500-420	CABINET-BOTTOM ; EG 0.8T DAT7000N	1	
320	16072-500-110	FOOT ; ABS 94HB HOT STAMPING (K860A/QUE)	2	
330	16072-500-130	FOOT-1 ; ABS 94HB (VE)	2	
340	16624-569-210	BRKT-GROUND ; SUS 0.2T DAT7000	1	

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
350	16624-557-810	BRKT-DECK ; SECC 1.0T DAT7000	2	
360	16624-563-410	BRKT-REC ; SPTE 0.5T DT 850	1	
370	16624-569-410	BRKT-PCB/G ; SUS 0.2T DAT7000	1	
380	16804-516-610	CUSHION-FOOT ; EVA SPONGE 3.0T	4	
390	16804-517-410	RUBBER-CENTER ; EVA SPONGE DAT7000	1	
400	16834-512-210	RUBBER-JACK ; EVA SPONGE DAT7000	2	
410	16844-519-410	RUBBER-FLT ; EVA SPONGE DAT7000	4	
420	17048-130-061	SCREW-RH ; +M3 x 6 FE FZY	4	
430	17128-540-123	SCREW-TAP, TH ; 2S-4 x 12 FE FZB	4	
440	17128-540-185	SCREW-TAP, TH ; 2S-4 x 18 FE FN RS1200	4	
450	17458-230-101	SCREW-TAP TITEBH ; 2S-3 x 10 FE FZY	55	
460	17654-560-010	SHIELD VOLTAGE ; PVC 0.5T DAT7000	1	

2) RAW SUB

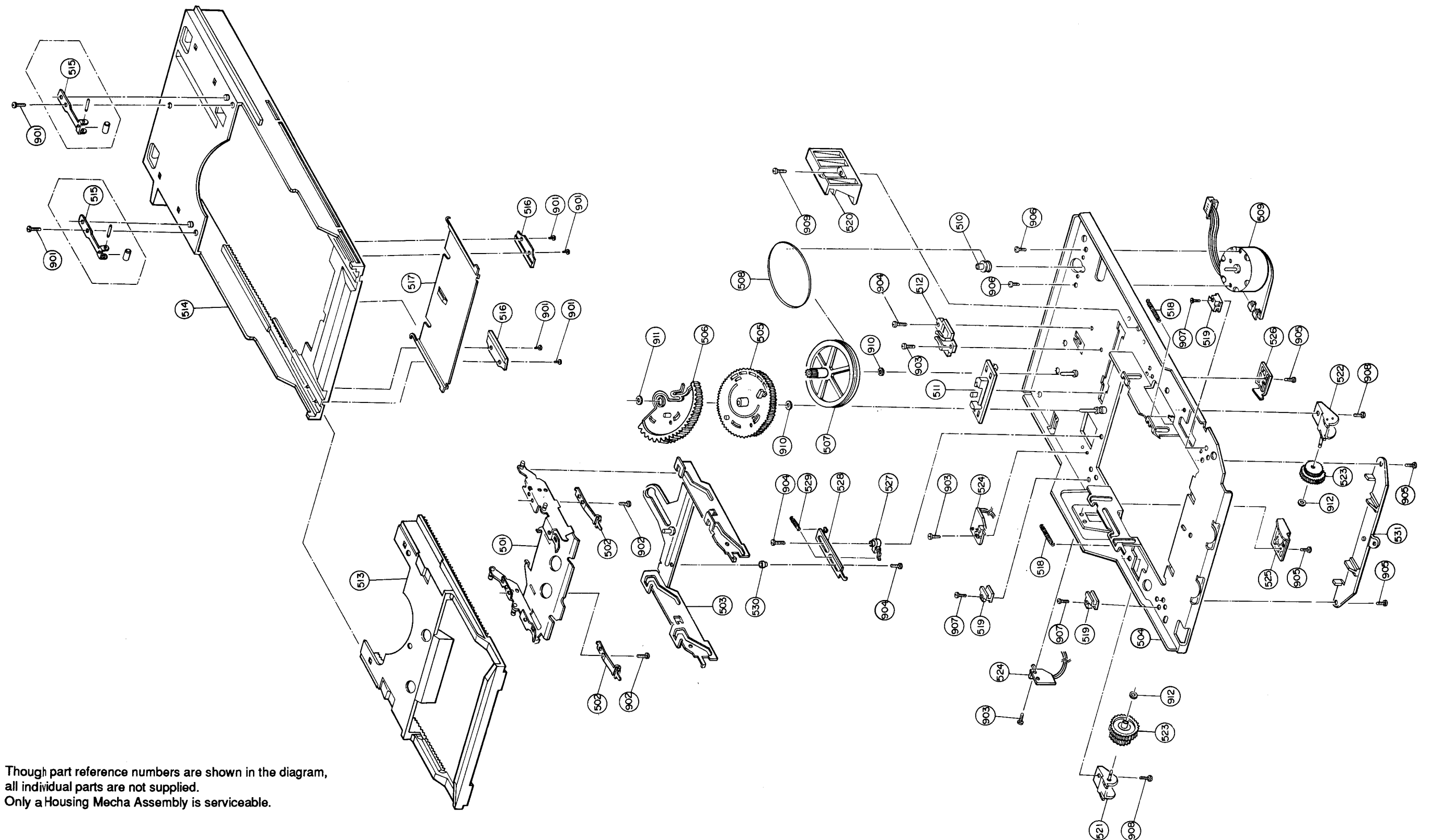
LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
	10469-100-008	SOLDER BAR ; SN63% PB37%	0.1	
	10469-211-360	SOLDER-FLUX, COREWIRE ; SN60 PB40 PI1.0	0.024	
	10809-100-304	LOCTITE ; #601, LOCTITE	0.0005	
	10809-100-305	ARON ALPHA ; #202	0.003	
	10809-100-307	SCREW LOCK ; THREE BOND 1401B	0.01	
	10809-121-501	BOND-SONY ; SC-306 BLK	0.0005	
	10809-420-013	GREASE-SILICON ; G746	0.005	
	10849-405-021	ALCOHOL-ISORPOPILENE ; 99%	0.006	
	10849-740-120	FLUX SOLDER ; JS-90TA	0.01	
	13099-500-310	WIRE-JUMP FOR TAPE ; TA 1/0.6MM 52 x 5MM	118	

[illegible]

1) DECK MECHANISM PARTS LIST

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
	15009-545-900	HOUSING-MECHA ASSY ; DT-850	1	
0123	16674-575-600	SPRING-BRAKE ; SUS304-WPB, DT850	1	
0201	15009-547-910	ARM P1 ASSY ; DAT7000N	1	
0300	17764-500-200	ARM-P6 ; ZDC2, DAT7000N	1	
0400	16674-576-400	SPRING-P6 ; SUS304-WPB, DAT7000N	1	
1300	16624-576-800	LINK-P1 ; SUS304CP, DAT7000N	1	
1401	15009-544-100	PINCH ARM ASSY ; DAT7000N	1	
1500	15009-544-400	LEVER T/U ASSY ; DAT SD-1, DT850	1	
1600	15009-544-300	LEVER SUPPLY ASSY ; DT850	1	
1700	15009-542-100	POLE BASE ASSY(S) ; DT-850	1	
1800	15009-542-200	POLE BASE ASSY(T) ; DT-850	1	
1900	15009-541-600	MOTOR-CAPSTAN ; DT-850	1	
2100	15009-543-200	GEAR BOX ASSY ; DT850	1	
2200	15009-547-500	LOADING MOTOR ASSY ; DT-850	1	
2401	15009-544-700	TENSION ARM ASSY ; DAT SD-1, DAT7000N	1	
2500	15009-547-700	BAND BRAKE ALL ASSY ; SD-1, DT-850	1	
2600	15009-541-900	REEL ASSY(S) ; SD-310 DAT7000N	1	
2700	15009-542-010	REEL ASSY(T) ; SD-320 DAT7000N	1	
2800	15009-543-700	REEL PLATE ASSY ; DT-850	1	
3200	13059-501-090	S/W MODE ; HMW0464-01-010	1	
3300	12169-301-520	PHOTOINTERRUPTER ; GP2L23R	1	
3400	12169-301-510	PHOTOINTERRUPTER ; GP2L23L	1	
3500	15274-504-700	BELT TIMING ; SD2003 DAT7000N	1	
3700	13579-901-020	S/W ID LEFT ; SPPW52053A (1 + 1 PIN) DAT7000N	1	
3800	13579-901-030	S/W ID LIGHT ; SPPW52052A (2PIN) DAT7000N	1	
4000	15124-500-700	ROLLER GUIDE # 40 ; SD-406 DAT7000N	2	
4600	17334-503-820	LUMMIRROR ; T0.35 x PI1.3 x PI4, DT-850	8	
5000	15009-542-300	PINCH ROLLER ASSY ; SD-601 DAT7000N	1	
5400	16034-505-600	CAP CENTER ; POM BLK, DT850	2	
5500	16604-540-900	COLOR P/R ; POM, DAT7000N	1	
5700	15274-504-400	BELT-LOADING ; CE, DT850	1	
5800	16624-617-200	BRKT-SENSOR (T) ; SUS304CP, DAT7000N	1	
5900	16674-568-400	SPRING-T.R ; SUS304-WPB, DT850	1	
6000	16624-617-100	BRKT-SENSOR (S) ; SUS304CP, DAT7000N	1	
6200	10113-909-001	ASSY DRUM FULL ; DT-850	1	
6301	17098-120-042	SCREW ; BH M2 x 4 (FZW) DT850	9	
6302	17008-120-042	SCREW-CH ; +M2 x 4 FZW, DT-850	12	
6304	17098-117-035	SCREW-CH ; +M1.7 x 3 FE FN DT850	5	
6308	17068-214-043	SET SCREW ; M1.4 x 4 DT-850 (#40)	2	
6309	17068-214-023	SET SCREW ; M1.4 x 2 DT-850 (#28)	2	
6402	17334-503-830	WASHER POLY CUT ; T0.25 x PI0.85 x PI3 DT-850	7	

17. HOUSING EXPLODED VIEW



* Though part reference numbers are shown in the diagram,
all individual parts are not supplied.
Only a Housing Mecha Assembly is serviceable.